

# MOTOR AGE

A CHILTON PUBLICATION

JUNE 1960



**Money Slipping  
Thru your Fingers  
... Sell More Shocks**  
page 38



PERFECT CIRCLE PISTON RINGS  
ARE BUILT TO TAKE IT

# THOUSANDS OF GRINDERS IN EVERY CYLINDER

Dirt particles in a cylinder act just like tiny grinding wheels to wear away the face of a piston ring. To protect against this abrasive wear, Perfect Circle 2-in-1 rings are plated with solid chrome—the hardest, longest-wearing surface you can buy.

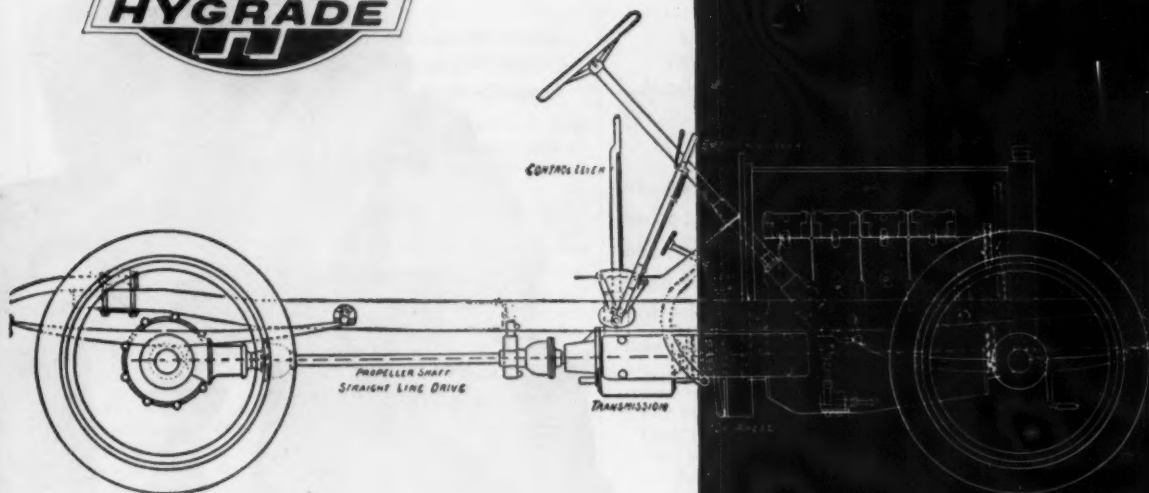
As a result, wear is reduced an average of 75% over non-plated rings. And, Perfect Circle's chrome plating is 25% thicker than the average of competitive plated rings to provide extra protection and extra life.

In every way, Perfect Circle rings are built to take it. Insist on Perfect Circles—first choice of leading engine manufacturers and mechanics everywhere.



**PERFECT  CIRCLE**

PISTON RINGS • PRECISION CASTINGS • POWER SERVICE PRODUCTS • SPEEDOSTAT  
HAGERSTOWN, INDIANA • DON MILLS, ONTARIO, CANADA

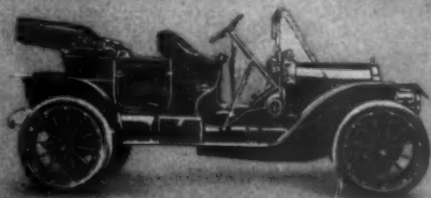


one of the very few cars\* you can't tune up with a Hygrade Jiffy Kit

You can tune up over 90% of all cars on the road with one economical assortment of Hygrade Jiffy Kits. Jiffy Kits contain needles and seats, gaskets, economizer valves, pump pistons, instructions and tools — to fit all carburetors: Carter, Stromberg, Ford, Holley, Rochester . . . and small engines, too! See your jobber or write HYGRADE PRODUCTS DIVISION, Standard Motor Products, Inc., Long Island City 1, New York.

## HYGRADE JIFFY KITS

*for Carburetor Tune-Up*



\*Sorry, no Jiffy Kit available for this 1910 Knox Model "N" Tourabout

*A kit  
for  
almost  
every  
car*



# "...very important to our business"

says **ROBERT C. BAUER**, President,  
Bob Bauer Motors, Plymouth-DeSoto-Valiant  
dealer of San Diego, California

"Full control of financing and the finance reserve offered through COMMERCIAL CREDIT are very important to our business. In the 13 years we have been using the COMMERCIAL CREDIT PLAN, we have been impressed by their very efficient collection system, with its low rate of repossessions, and the thorough training they give their men in understanding dealer problems. We offer our salesmen an extra bonus for closing deals that include our house plan. And we actively follow up leads COMMERCIAL CREDIT supplies us in advance of a customer paying up."

## *Commercial Credit dealers are successful dealers*

Write or call the nearest COMMERCIAL CREDIT CORPORATION office for complete information on the benefits of COMMERCIAL CREDIT PLAN. Why not do it, today?



A service offered through subsidiaries of the  
Commercial Credit Company, Baltimore . . . Capital  
and Surplus over \$240,000,000 . . . offices in principal  
cities of the United States and Canada.





# News from the Chemical Workbench

SERVICE INFORMATION FOR THE PROFESSIONAL FROM PERMATEx



## NEW 3-Ounce Size SOLVO-RUST Sets Up to Make "Silent Salesman" Display

Here's a product made to sell . . . right off the counter . . . right out of the carton. 3 ounces of pure power! Just a few drops will free frozen or rusted parts in seconds.

### WHO Needs It?

**Everybody.** Maintenance men, servicemen, mechanics, plumbers, hobbyists, hunters . . . even YOU need this handy size.

### HOW Does It Work?

Powerful penetrant is safe to use on all metals . . . has detergent qualities which spread fast. Dispersed graphite lubricates.

### What Does It Cost?

In display carton your cost is 22¢ each; you sell it for 35¢. And don't forget SOLVO-RUST in the larger sizes for your own use.

## PERMATEx Valve Grinding Compound Great For Lawn Mowers

Perhaps you have a lawn mower to fix. Make yourself some extra money by selling a tube of Permatex Valve Grinding Compound. It does a neat job of sharpening dull reel-type lawn mower blades. Just dab a little bit on, reverse the pawls so that lawn mower rotates in opposite direction, and presto! The blade is sharp. Try it on your own lawn mower. And you'll probably find uses for it in your own shop—even to sharpening your own tools! It comes in a handy tube, and it costs you 26¢ in units of one dozen—and you sell it for 45¢!

## Short Cuts to Engine Repair with PERMATEx Cold Parts Cleaner

Throw away that bucket of kerosene or gasoline you've been using to clean engine parts. In the long run it's cheaper to use Permatex Cold Parts Cleaner. It does the job better. The handy bench-size 1½-gallon size comes complete with dipping basket. Just put the part you want to clean in the basket, lower into the can,



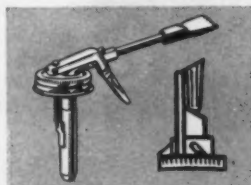
let stand, take it out—presto, the part comes clean! Permatex CPC is great for carburetors, gear assemblies—anything on the engine you need to clean. You can get it in 6-gallon drums, with or without dipping basket, and it will prove a time-saver in your daily operations. Permatex CPC is great for cleaning those greasy tools of yours, too.

Mechanics tell us that the newest addition to the Permatex line, Permatex Degreaser-Cleaner is one of the handiest products on the market today. And it's a perfect partner to Permatex Cold Parts Cleaner.

## HELPING YOU—THE PROFESSIONAL—SELL

Permatex provides you with the promotional tools you need to sell Permatex Chemical Products. For instance, there's a new all-products wall-chart available that gives you the full line of products, where to use them, and the prices. Your Permatex Supplier has a copy for you. Also, available is a special sealants-application chart. There are other promotional items—check your supplier—or write us direct.

## More Tips on FORM-A-GASKET®



1. Water Pump Seal. Apply a thin coat of Form-A-Gasket® No. 2 to both sides of the flange gasket to make a positive seal. Stops anti-freeze leakage.
2. For Vapor Lock Trouble. Coat the fuel pump and lines with Form-A-Gasket No. 2. It forms an effective insulation barrier at the hot spots.
3. Installing New Muffler. Apply Aviation Form-A-Gasket No. 3 to ends of exhaust pipe and tail pipe to make an easy, tight assembly.
4. Automatic Transmission Fluid Leaks. Apply Permatex Super "300" to both sides of torque converter gaskets and around other parts causing trouble.
5. Clutch Housing Oil Leak. Form-A-Gasket® No. 2 applied to bolt or stud threads will stop leakage through flywheel mounting bolts.

### Convenience with PERMATEx

Permatex Form-A-Gasket® comes with special spreader caps. Applicator guns to be used with cartridge cans are available. Ask your supplier for the sizes and products that offer these convenient ways to apply Form-A-Gasket.®

## Car Care Dividends FOR DEALERS

Car manufacturers recommend a regular wash and wax procedure in their owner manuals—it keeps the resale value of the car higher. That's why you should tie-in an outside Car Care special whenever you have a lube or tune-up special. Usually with a lube or tuneup it means the car is around your station a good part of the day—so you have the opportunity to wash, clean and wax the car.

### Simplify The Job

Permatex makes a complete line of Polishes and Cleaners that are easy to use and meet every need: Perma-Lustre—cleaner-polish for enamel and lacquer body finishes; Chromium Polish—cleans and protects chrome parts; Fabric Cleaner—for all stains, spots and soiled areas. Removes tar, lipstick, gum, grease; Blue-Blazes®—removes dirt, grime from finishes. Leaves long-lasting silicone wax coating; Car Wash—powerful detergent action. Won't streak or hurt finish; Windshield Cleaner Concentrate—for automotive windshield washer reservoirs and spray bottles; Acrylic Cleaner and Polish—use on all acrylic finishes. Tar Remover—removes all tars, gums; safe for all acrylics.

### Try It And See For Yourself

Order the Permatex Polishes and Cleaners you need. Check first hand how well this idea works.



*Do you have a service tip on a Permatex Product? You will get \$5 when it's published in "News from the Chemical Workbench." Send it to:*

### PERMATEx COMPANY, INC.

300 Broadway, Huntington Station, L. I., N. Y.  
Factories: Brooklyn 35, N. Y. Kansas City 15, Kan.

don't divide your income with  
**lost time**



protect your service profits with a

## *Lathem* PAYROLL and JOB TIME RECORDER

Consider the ways that time on the job can be wasted . . . can run up even higher your cost of doing business. For instance . . . too much delay between jobs . . . too much time on each job . . . excessive tardiness.

To correct these abuses, you need to know where they occur. And that's where a Lathem Time Recorder can do a job for you. It gives you an accurate record of the time each job is started and completed . . . when each employee arrives and leaves work. Every loss of time stands out . . . ready for you to eliminate for a better profit picture.

Mail the coupon today for complete information, prices and sample payroll and job cards.

### LATHEM TIME RECORDER CO.

66 Third Street, N. W., Atlanta, Georgia

Gentlemen: Without obligation, please send me complete information, including prices, about the Lathem Payroll and Job Time Recorder.

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
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JUNE 1960

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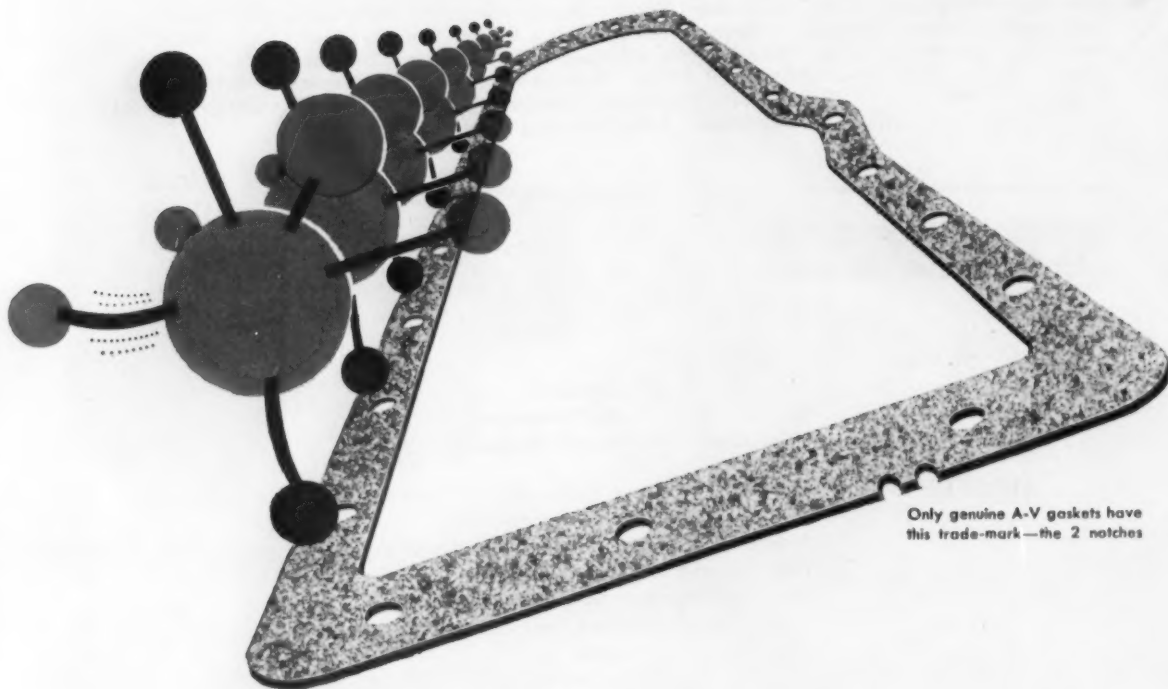
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# MOLECULES DANCE ...



Only genuine A-V gaskets have  
this trade-mark—the 2 notches

## TO MAKE A-V CORK GASKETS BETTER

When Armstrong Cork men hit the "high ones" (high-frequency cork baking, that is!), something happens to the molecules in the cork composition to make Armstrong-Victor Cork Gaskets better in every way. Electronic baking makes cork denser and stronger, without losing its natural resiliency. It is never under-cured or over-cured as often happens when cork is steam-heat cured.

That's why A-V Cork Gaskets seal tighter and last longer; are stronger, more flexible, more resistant to breakage. These advantages, plus A-V precision die-cutting and sharp, clean punching, assure you of the finest quality gaskets you can buy. Your Victor Jobber carries complete stocks—in sets and individual parts. Victor Mfg. & Gasket Co., P.O. Box 1333, Chicago 90, Ill. Canadian Plant: St. Thomas, Ont.

**Armstrong-VICTOR**  
**CORK GASKETS**

**The 100% Coverage Line — for Cars, Trucks, Tractors, Stationary Engines**





## The Biggest Exclusive in the Used Car Market: Chevy's

The OK symbol that you as a Chevrolet dealer assign to superior used cars is the most consistent customer attraction in the business. For 35 years now it has meant that the car that wears the OK has been thoroughly inspected, reconditioned for value, safety and performance, and honestly described. And how the used car buyer knows it! He is reminded of the full meaning of the OK sign almost daily through powerful national ad-

vertisements Chevrolet runs to help your sales programs. And because there are nearly 3,000,000 more Chevrolet cars and trucks on the road than any other make, it's only natural the used car buyer turns to a Chevrolet dealer and the OK sign for a wider selection and better buys. Yes, the OK is well established in the public mind and it's exclusively yours from Chevrolet! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

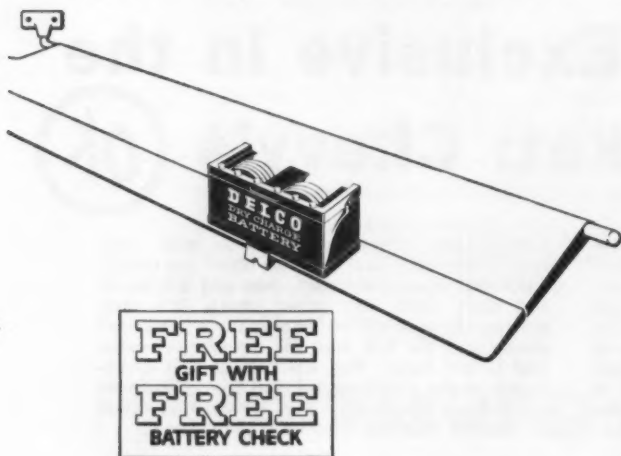


*Chevrolet dealers are No. 1 with customers because customers are No. 1 with Chevrolet dealers!*



### *The Come-hither . . .*

Bring them in with the Delco Coin Caddy, a handy little gadget that clips to the sun visor of your customer's car, carries small change for parking meters and phones. A colorful pair of signs (one weatherproof) invites prospects in to get a free battery check and FREE coin caddy!



### *The Clincher . . .*

A Casco Sprinkle Spray Steam Iron, brand new on the market. Every customer who buys a Delco Battery from you may have this wonderful new iron for only \$11.95!



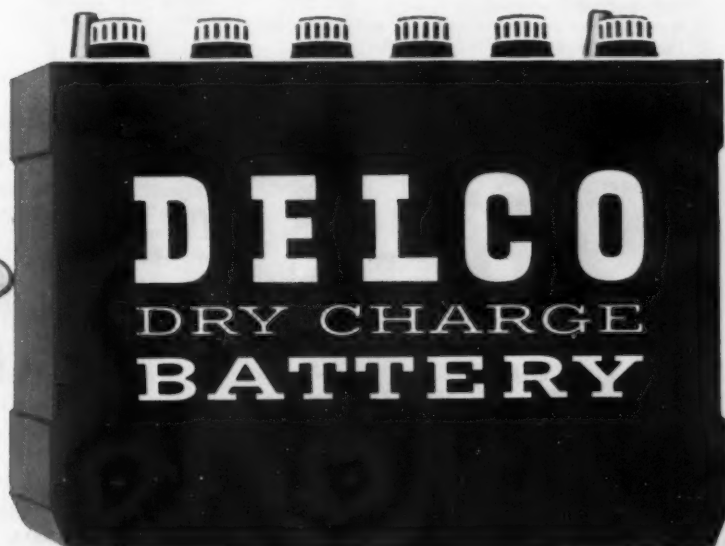
QUALITY BUILT BY DELCO-REMY . . . DISTRIBUTED NATIONALLY THROUGH



# DELCO PUTS STEAM HEAT ON BATTERY PROFITS

## *The Clean-up . . .*

You never saw an easier, more effective promotion. All you do is give your customer a coupon. He fills it out, mails it to Casco with his \$11.95, and they ship the iron direct to him, postpaid. The only iron you handle is the one on display, *and you keep it or sell it after the promotion is over!* This money-making deal is part of Delco's big Double Check promotion. Check the details with your Delco supplier today.



NOT ALL BONDED BRAKE SHOES ARE AS SAFE AS

*Raybestos*

## WHY?

Consider the lining. Whose brake lining is on the bonded shoes you buy? What about this manufacturer's experience, his **reputation**? Will he stand behind his product no matter what happens? With

Raybestos Riveted or Bonded Lined Shoes, you relined confidently. No unknown quantity there. Just the opposite—**known quality**. We are proud of our lining and brand each piece with the famous Raybestos name. Our

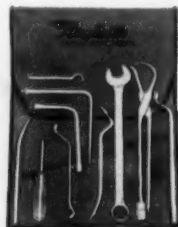
linings are a result of the most advanced manufacturing techniques and premium materials. And **only** Raybestos makes 8 different types of linings custom-tailored in precise combinations for each make and model car.

### WHY RANK RAYBESTOS LINED BRAKE SHOES ABOVE ALL THE REST? SEE FOR YOURSELF—MAKE THIS COMPARISON TEST!

|  | RAY-BESTOS | OTHER BRAND |
|--|------------|-------------|
| 1. Approved by the United States Government under lined brake shoe specification No. KKK-B-00640   | X          |             |
| 2. Produced by a basic manufacturer of brake shoes   | X          |             |
| 3. Produced by a basic manufacturer of bonding cements   | X          |             |
| 4. Produced by a basic manufacturer of brake lining  | X          |             |
| 5. Laboratory tested on dynamometers   | X          |             |
| 6. Proving ground tested on one of the largest company-owned test fleets   | X          |             |
| 7. Contain no drum-scoring wire backed linings   | X          |             |
| 8. Every shoe shear tested for bond strength   | X          |             |
| 9. Ground as follows to meet vehicle manufacturers' specifications:<br>A. Standard Contour Ground<br>B. Contour Anchor Ground<br>C. Contour Cam Ground | X          |             |
| 10. For use on power or manually operated brakes   | X          |             |
| 11. Linings made by 8 different manufacturing processes  | X          |             |
| 12. Right combination of linings for each make and model car   | X          |             |
| 13. Produced by supplier of brake lining to original equipment vehicle manufacturers   | X          |             |
| 14. Branded with manufacturer's name, number and shoe position   | X          |             |
| 15. Come in sealed boxes for customer protection   | X          |             |
| 16. Reduce your overall investment in cores  | X          |             |
| 17. Give maximum coverage with minimum inventory, yet have no improper substitutions   | X          |             |
| 18. Bonded under factory specifications and supervision  | X          |             |
| 19. Linings properly positioned on shoes   | X          |             |
| 20. Acclaimed the first choice of car owners and the trade in independent surveys  | X          |             |
| 21. Advertised to car owners in national magazines and network radio   | X          |             |

### New Raybestos Clinic features brake service on Corvair, Falcon and Valiant

How to service brakes properly on the Corvair, Falcon, Valiant and other popular cars is highlighted in the brand-new motion picture, "Total Brake Service with Raybestos." This sound color film shows brake work being done on 16 real cars—not brake models. See your Raybestos jobber about a showing.



Also emphasized in the clinic is how to save time and increase profits by using the right brake service hand tools,\* including the two new compact car brake tools specially designed by Raybestos.

\*These tools are included with Raybestos Lined Brake Shoe Assortments

## Advertising, sign, 7-Point Check...terrific team!



Raybestos powerful consumer advertising—spearheaded by NBC-Radio's "Monitor"—motivates car owners to be on the lookout for this new wind-tested sign. So put it up and make the most of the one merchandising plan that makes wheels off pay off...

*Raybestos*

**7 POINT BRAKE CHECK**  
(includes adjustment)

1. Pull front wheels, inspect linings
2. Check brake drums
3. Inspect front wheel bearings
4. Clean brake assembly
5. Check hydraulic system
6. Adjust brakes or recommend relining
7. Road test brakes

RELINING WITH  
*Raybestos*

AMERICA'S BIGGEST SELLING FRICTION MATERIAL  
RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONNECTICUT  
RAYBESTOS-MANHATTAN, INC., SPECIALISTS IN ASBESTOS, RUBBER, SINTERED METAL, ENGINEERED PLASTICS



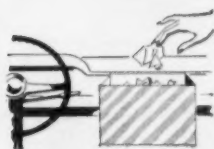


# DOUBLE YOUR PROFIT TWO WAYS

*with Pennzoil Z-7 Motor Oil  
and Pennzoil Outboard Motor Oil*

## BOTH IN THE NEW TWIN PACK

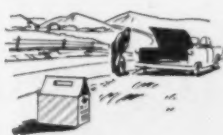
*This New  
Pennzoil  
package helps  
you sell every  
customer two  
extra quarts...  
for car or boat!*



1 Carton is  
handy litter box



2 Holds supply  
of sand



3 Doubles as  
a highway warning



4 As a boat-dock  
night marker



5 As a useful  
carryall

**Customers go for Pennzoil. And they're going for the new TWIN PACK.**

It's a valuable extra. Reflectorized carton is easy to carry.

Easy to store in car or boat. Useful in many ways.

Refined from 100% pure Pennsylvania crude, amazing Pennzoil Z-7 is so rich it gives your car's engine double the protection demanded. So complete you never need extra additives. And Pennzoil Outboard Oil is specially designed to keep spark plugs, rings and ports whistle-clean.

Call your Pennzoil distributor today about his Special Profit Offer on Pennzoil Z-7 and Pennzoil Outboard Motor Oil in the new TWIN PACK.



Member Penn. Grade Crude  
Oil Assn., Permit No. 2,  
Oil City, Pa.



Here's a spark plug wire which  
will last longer at higher  
temperatures and higher voltages!

## Pyril\* Spark Plug Wire by Belden

- Pyril withstands extreme heats developed by trucks, buses, and tractors 50% to 200% longer than standard spark plug wires.
- The CH60 jacket of double-extruded Pyril provides greater resistance to external corona than conventional neoprene types . . the firm bonding of insulation to conductor, plus the use of a corona-resistant compound, makes Pyril many times better in resisting internal corona.
- For a longer lasting, high-heat-resistant primary wire . . which will withstand abrasions, and exposure to gasoline, oil, anti-freeze and steam cleaning fluids . . use silicone engine compartment wire by Belden.

**Order from your Automotive Jobber**



\*Belden Trademark

7-2-0

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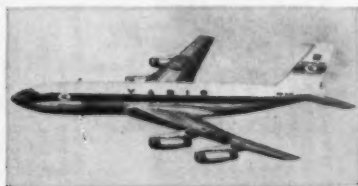
**One wire source for all fleet applications**

Chilton's MOTOR AGE • June 1960

**PUROLATOR announces its 1960**  
**\$142,000**  
**PRIZARAMA**  
(FOR SERVICE STATIONS, GARAGES AND CAR DEALERSHIPS)



**TWO VACATIONS FOR TWO in RIO...via VARIG AIRLINES**



Win a fabulous expense-paid vacation-for-two in the wonder city of South America... fly from New York to Rio de Janeiro via VARIG AIRLINES, the Jet Airline to Brazil. Spend 10 days at the famous GLORIA HOTEL in Rio. It's a never-to-be-forgotten vacation for two via VARIG AIRLINES!

**SEE ALL 2438 PRIZES ON THE FOLLOWING PAGES**

# For home and business

# 2438 PUROLATOR

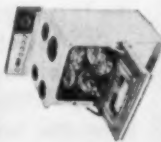
# PRIZES [COUNT 'EM]



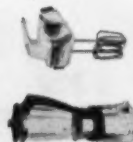
**2 LARK two-door Sedans by Studebaker**  
LARK two-door Sedans for the fun-drive of your life... see, it's a Studebaker Lark. It's a compact car with a big, big, big Studebaker! You'll be tops in the compact field with this LARK.



**10 Columbia Hi-Fi Consoles**  
Concent-hall realism is yours in the magic COLUMBIA Hi-Fi Stereo System. COLUMBIA Hi-Fi Stereo System... balance in tone reproduction and design for your listening enjoyment.



**10 Westinghouse Electric Ranges**  
WESTINGHOUSE Electric Range... combining functional beauty with speed cooking... giving the housewife the widest possible range of cooking convenience.



**100 Iona Portable Mixers**  
De Luxe Portable Mixer... mixers, whips, beats and slurs... Three speeds... Blender performed... magic in preparing drinks, soups and salad dressings.



**10 Fedders Air Conditioners**  
FEDDERS Four Seasons Room Air Conditioner... the unit that heats or cools any room any season of the year. It does double-duty in any home.



**10 Westinghouse Automatic Electric Clothes Dryers**  
WESTINGHOUSE Automatic Electric Dryer... control for the fastest drying of any type material.



**20 Rawlings Golf Club Sets**  
RAWLINGS Golf Sets... the famous "Bob Goalby" line... each set consisting of 4 woods and 12 irons, scientifically "back-weighted" for power and performance.



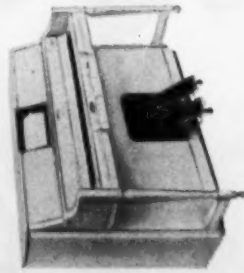
**20 Necchi Portable Sewing Machines**  
NECCHI Portable Sewing Machines... for efficiency, economy, it's the most modern straight-stitch sewing machine for the homemaker.



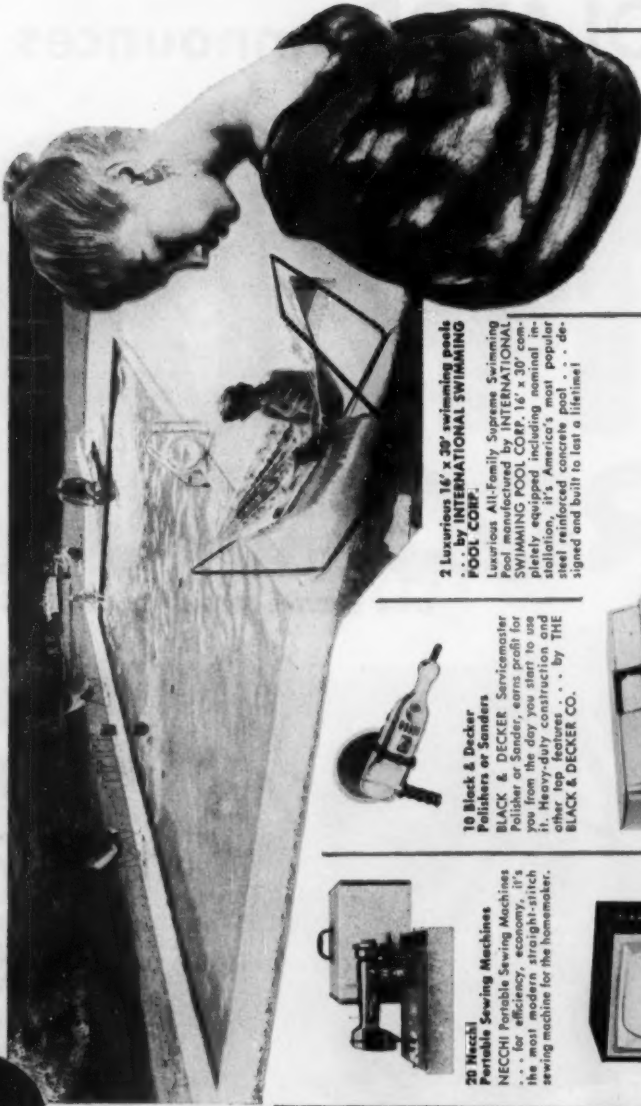
**4 RCA Color TV Sets**  
Living color right in your home... RCA Color TV sets... the brilliance of the top achievement in TV today... "living color."



**10 Black & Decker Sanders or Sanders**  
BLACK & DECKER Sander... for Polishing of Sander, earns profit for you... Heavy-duty construction and other top features... by THE BLACK & DECKER CO.



**4 Hardman "Duo" Pianos**  
It's twice the fun when your piano is in two... full 88-key MAN "Duo"... console plus the added fun and enjoyment of a player piano. Manufactured by Hardman, Peck & Co.



**2 Luxurious 16' x 30' swimming pools**  
... by INTERNATIONAL SWIMMING POOL CORP.  
Luxurious All-Family Supreme Swimming Pool manufactured by INTERNATIONAL SWIMMING POOL CORP. 16' x 30' completely equipped including nominal installation, it's America's most popular swimming pool... concrete pool... designed and built to last a lifetime!

**8 Mink Stoles by H. B. A. Ferriars**  
Mink stoles fashionably designed by H. B. A. Ferriars of New York, New York... finest fashion styles by a master craftsman in fine furs.





**500 Lee-O-Lite Table Lamps**  
LEE-O-LITE Table Lamps, handsomely designed and created for use in home or office. This functional table lamp blends in harmoniously with all types of decors.



**50 Evans Bicycles**  
EVANS Bicycles, winner's choice of boys' or girl's models. It's the EVANS Interceptor, 1960's smartest and most exciting bike. Made by EVANS PRODUCTS CO., of Plymouth, Mich.



**12 Coleman Space Heaters**  
COLEMAN "Decorama" vented Oil Space Heater... designed for efficiency in either home or office. Provides up to 25% savings on fuel bills with 100,000 Btu. heating capacity. P... with THE COLEMAN COMPANY, INC. of Wichita, Kansas.



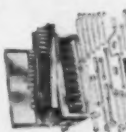
**6 Buell Air Horn Sets**  
BUELL strikes the right note in air-horn systems for service station use. It's a complete set including horn, compressor and Klaxon Kit. Made by BUELL MFG. CO., of Lyons, Illinois.



**100 Bridgeport Screwdriver Sets**  
... made especially for craftsmen by Bridgeport Hardware Manufacturing Co. The set includes the four most popular types... featuring highly polished tool steel blades... plus Cushion Grip neoprene handles for extra turning power and super comfortable grip.



**20 Clarke Auto Vacuum Cleaners**  
Here's the vacuum cleaner for that "extra customer service" that means so much more—the new Clarke Model 600 Light-weight Heavy Vacuum Cleaner. Made in Canada by CLARKE FLOOR MACHINE CO., of Muskegon, Mich.



**9 Dura-Chrome Socket Tool Sets**  
These alloy steel tool sets... have built-in efficiency for servicing practically everything from ignition systems, carburetors, generators and general automotive and industrial work. Made by PRODUCTS COMPANY of Chicago.



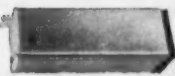
**125 Columbia Transistor Radios**  
COLUMBIA Transistor Radios, smaller, smarter, more powerful than ever before. It's a powerful new sound... Columbia engineers for top performance and value.



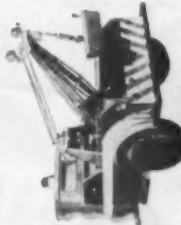
**3 Stanco "Fold-A-Way" Trailers**  
STANCO's "Fold-A-Way"... today's most versatile, most convenient trailer. Perfect trailer for utility value... can be stored away in minutes practically anywhere. STANCO MFGS. & SALES, INC. of Santa Monica, California.



**150 Vise-Grip Sets**  
VISE-GRIP presents a set of 4 of their famous tools... VISE-GRIP wrenches, VISE-GRIP C-Clamp, VISE-GRIP Welding Clamp... all featuring easy-release. VISE-GRIP is manufactured only by KVERSEN MFG. CO., INC., of Davis, Nebraska.



**5 Oasis Water Coolers**  
OASIS means refreshment... and the OASIS Model 3P water cooler has all the features that mean refreshment—plus! Ideal for installation indoors or outdoors. Made by EFCO MFG. CO. of Columbus, Ohio.



**1 Weld-Built Wrecker Truck Equipment**  
The ultimate in towing equipment... 3 different units take the work out of any job! WELD-Built's Model 5A-5 Wrecker with 101-A Body and Tow Bar... Model 5A-5 Crane... and Model 3A-P Wrecker... Electric Powered. Built by WELD-BUILT BODY CO., INC., of Brooklyn, N.Y.



**1 Choldun Push Button Auto Laundry**  
... puts you in the carwash business for top profit. It's complete with Carwasher, 3 Car Dryers, Vacuum, and more. Made by CHOLDUN MFG. CORP., New Haven, Conn.



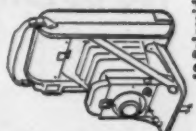
**3 Choldun Steam Cleaners**  
CHOLDUN "Iron Horse" Steam Cleaners... with 20 exclusive CHOLDUN features for easier use, superior performance, and extra capacity. Made by CHOLDUN MFG. CORP. of New Haven, Conn.



**2 Frigiking Auto Air Conditioners**  
FRIGIKING Auto Air Conditioners for the fastest cooling possible, installed in a few hours in your present car. Features Turbo Jet Motor. Made by FRIGIKING CORPORATION of Dallas, Texas.



**5 Choldun Model 600 Oil Changers**  
... for changing oil at the gas pump island! It measures oil taken from crankcase, shows condition of oil, flushes crankcase, returns oil to sump. Made by CHOLDUN MFG. CORP., New Haven, Conn.



300 17-jewel Benrus watches



500 Seth Thomas travel clocks



60 sets of Melmac dinnerware



5 6-12 V. Battery chargers

**ALL THE ABOVE PLUS THESE 1175 ADDITIONAL CHANCES TO WIN...**

**DETAILS ON NEXT PAGE**



10 Polaroid cameras

# IT'S EASY! BE A PRIZARAMA WINNER

No puzzles—no jingles—nothing to buy—no limit to entries!

Prizarama open to employees of service stations, garages, auto repair shops and car dealerships. Supplier salesmen also get a chance to win in a special salesmen's drawing.

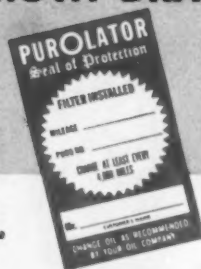
## DRAWING #1

Includes all entries received by July 31, 1960

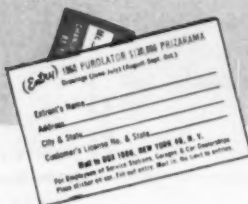
## DRAWING #2

The Blockbuster drawing includes all entries received from Aug. 1 and postmarked no later than October 31, 1960 PLUS all non-winning entries from the first drawing!

**OVER 2400 PRIZES  
2 MAMMOTH DRAWINGS**



Purolator air filter stickers are also eligible



### Here's all there is to do!

**1**—Place a Purolator "Seal of Protection" sticker on a customer's car or truck. There's a sticker in each Purolator carton. Additional stickers are available from your supplier, or on request to Purolator. Air filter stickers are also eligible.

**2**—Your Sweepstakes entry blank is printed on the back of the "Seal of Protection," and is peeled off when sticker is placed on vehicle. Fill out entry neatly and completely.

**3**—Save all entries. Mail them to Sweepstakes headquarters in an envelope. Be sure to mail in time for each of 2 drawings (see dates above). Remember—no limit to entries. The more you send in—the better your chances to be a winner.

Get complete rules and details from your Purolator Supplier today! Remember every sticker is another chance for you to be a winner!



### The Standard Equipment Line

# PUROLATOR

**OIL, AIR & FUEL FILTERS**

**PUROLATOR PRODUCTS INC., Rahway, N. J., Toronto, Ontario, Canada**

"Purolator" and "Super-Micronic" Reg. U. S. Pat. Off.



**CUSTOMERS WILL COME TO YOU** when they know you use top quality parts and give 'em good service. And they *know* Timken is the name that stands for top quality. Tell your customers you use *Timken*® tapered roller bearings on a bearing job. Then they can be sure they're getting the best bearings money can buy . . . the lowest price per mile after mile after mile. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO". Canadian Division: Canadian Timken, St. Thomas, Ontario.



**CUSTOMERS LOVE YOU WHEN YOU USE AMERICA'S  
BEST-KNOWN BEARINGS FOR SERVICE . . . SO TELL 'EM IT'S . . .**

**TIMKEN®**  
tapered roller bearings



You can speed up your service operation and get parts for both Ford cars and trucks . . . as well as for other-make cars and trucks by simply keeping *one* number in mind. That's the telephone number of your nearest Ford Dealer. He's the man who can deliver Super-Quality Parts . . . at Supermarket Prices! He's the man who will rush GENUINE FORD PARTS *for FALCONS* to you when you *need* them. In fact, your Ford Dealer is the *only* man who has a complete line of Falcon parts in stock. Truckers will also find this is true of GENUINE FORD PARTS *for FORD TRUCKS*. Or, if it's GENUINE FORD PARTS *for*



# E

call...  
that's  
all



FORD CARS you want, he has them, too. They're made to the highest quality standards in the world! And, for the World's Most Wanted Car you can get the parts that are built right . . . to fit right . . . last longer . . .

GENUINE FORD PARTS *for* THUNDERBIRDS.

It takes *one* call . . . that's all! Your Ford Dealer has the biggest stock of Genuine Ford Parts under one roof.



*Don't miss the Parts Specials at your Ford Dealer's Trading Fair*



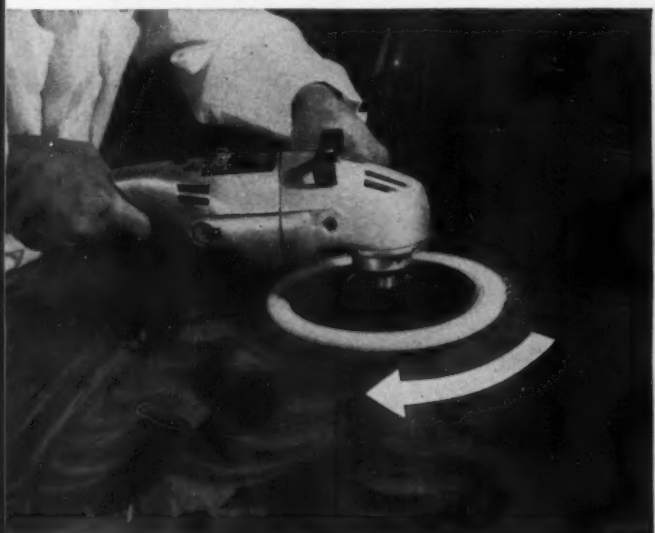
**LOW SPEED**—for polishing confined areas and badly oxidized finishes, rubbing, cleaning, removing "orange peel."

**REGULAR ROTATION**—for bringing up the maximum surface gloss to both old and new car finishes.



**HIGH SPEED**—for the new acrylic paints and latest type polishes, for fast polishing of large areas, for disc sanding.

**REVERSE ROTATION**—for finishing the job by eliminating "swirl marks." Fluffs and cleans pad for longer pad life.



## New 2-speed polisher erases "swirl marks"

Skil announces first major improvement in polishers in 30 years

Up to now, all electric polishers rotated in only *one* direction, at *one* speed—which was fine for *one* type of work!

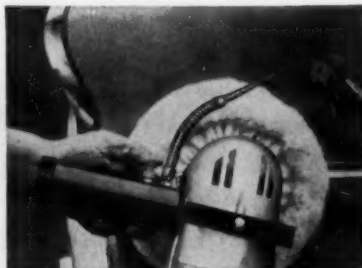
But Skil's new Model 196 polisher does 'em all one better. It's a low speed polisher when you need low speed—for most cleaning, buffing and polishing.

Flick a switch and suddenly it's a high speed polisher, too, for the new acrylic finishes and latest type polishes.

Flick another switch and the pad rotates in the opposite direction, "swirl marks"

disappear completely. Reverse rotation also fluffs up and cleans the pad for longer pad life and faster polishing.

Here, at last, is the perfect polisher for every finish, every car, every shop. Only \$99.50 complete. Ask your Skil distributor for a demonstration right away. He's listed under "Tools—Electric" in the Yellow Pages. Or for complete information, write: Skil Corporation, 5033 Elston Avenue, Chicago 30, Illinois, Dept. 102-F. In Canada: 3601 Dundas Street West, Toronto 9, Ontario.



**NEW SKIL MAGIC HANDLE POLISH DISPENSER (No. 21500)** applies any liquid polish at the touch of a button. Fits most makes of electric polishers. \$12.95.



... and SKILSAW POWER TOOLS

**AC SELLING SLANT OF THE MONTH!**

**MONEY-MAKING FACTS FOR DEALERS**

# capture bigger profits with the **NEW AC CAP CABINET & ASSORTMENT**



This attractive cap cabinet is yours at no cost—when you purchase the cap assortment! That's right. All you buy is 29 radiator caps and 14 gasoline caps in this fast-moving assortment at the usual price—and this attractive cabinet is yours. This sturdy, all-metal cabinet provides display space on the cover for 1 gas tank cap and 1 radiator cap. You can use it as an attention-getting counter display—or mount it on your lube bay wall. Its spacious interior accommodates the full cap assortment, plus your present cap stock—with a special compartment for your cap tester or hydrometer. Here's the ideal way to keep your complete cap inventory in a convenient spot—and build cap sales, too!

**Your cap assortment fills the bill for over 9 out of 10 customers.** This fast-moving assortment covers practically all requirements. The 29 radiator caps in the assortment cover 96% of all pressure cap applications; the 14 gasoline caps, 90%. This can't help but add to your profits.

**A handy specification chart is also included**—located inside the cabinet cover, handy and protected from dirt. This up-to-date chart will help you find the right cap for all applications.

## **FAST TURNOVER—FAST PROFITS**

Dealer cost for the assortment of 29 AC radiator caps and 14 gasoline caps is only \$29.85—the all-metal cabinet comes at no charge. With a suggested retail value of \$49.85—you can make a whopping \$20.00 profit on an investment of only \$29.85.

|              |                |
|--------------|----------------|
| suggested    |                |
| retail value | <b>\$49.85</b> |
| your cost    | <b>29.85</b>   |
| your profit  | <b>\$20.00</b> |

**ORDER YOUR CAP CABINET AND ASSORTMENT CA-1 NOW!**



# SELLING SLANTS

## MONEY-MAKING FACTS

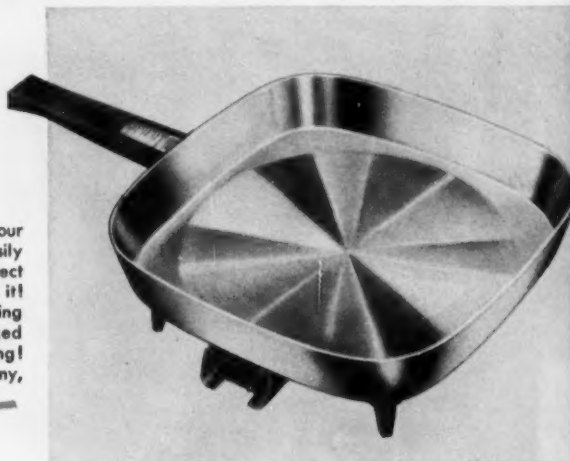
### Give the little lady offered with AC's new



**AC's newest, value-packed FUEL PUMP PROMOTION is your call to fuel pump sales action and profit—and the immediate ownership of a brand-new, fully automatic PRESTO FRY PAN, PRESTO CONTROL MASTER and PRESTO RECIPE BOOK!**

#### PRESTO FRY PAN

Big 11-inch model will give your wife plenty of room to easily and assuredly prepare perfect meals every time she uses it! Fully automatic! Ends scorching and burning! Can be submerged in water for quick, easy washing! A gift she'll treasure for many, many years!



#### PRESTO CONTROL MASTER

Actually puts an electric range in the palm of her hand—by operating eight different Presto appliances to perfection. Easily attaches to her new Fry Pan to assure completely accurate control of heat. Features large, easy-to-operate temperature selector dial. The seven other appliances are available through your local Presto dealer.



#### PRESTO RECIPE BOOK

Eighty pages that take your wife through carefully prepared recipes for delicious food specialties. In addition are instructions on the care and use of her new Presto Fry Pan and Control Master Unit. She'll find a new joy in cooking—the Presto way!

#### USE THIS PROMOTION TO STIMULATE EMPLOYEE SALES ACTION!

The Presto Fry Pan and Control Master Unit makes a perfect prize for an employee Fuel Pump Sales Contest. Offer them as the reward to your service men selling eight AC Fuel Pumps during this big profit-making program.



**OF THE MONTH !**  
**FOR DEALERS**

# *this automatic Fry Pan* **Fuel Pump Promotion !**



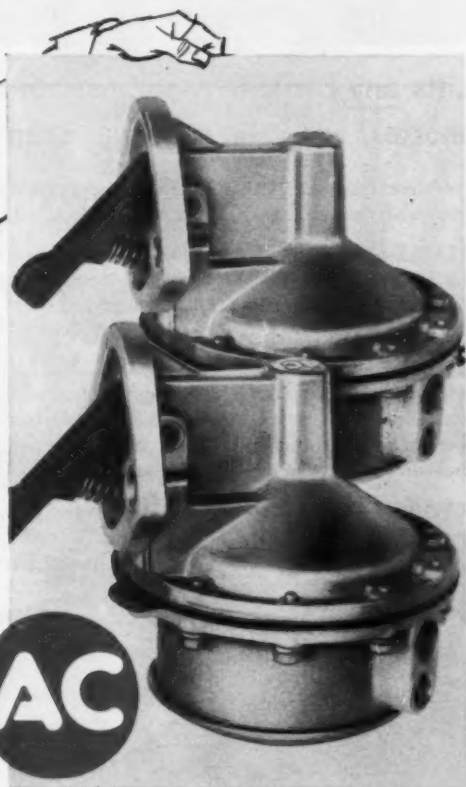
**HERE'S THE  
PROMOTION!**

**FIRST**—order any 6 fast-moving, profit-making AC Fuel Pumps of your choice—and include only an additional \$17.40 for the promotion package.

**SECOND**—you'll receive the new AC Promotion Package that includes:

- Big 11" Presto Fry Pan
- Presto Control Master Unit
- Eighty-Page Presto Recipe Book
- Two AC Fuel Pumps (#4460, Single Action, Chevrolet V-8, 1955-57) worth \$17.40.

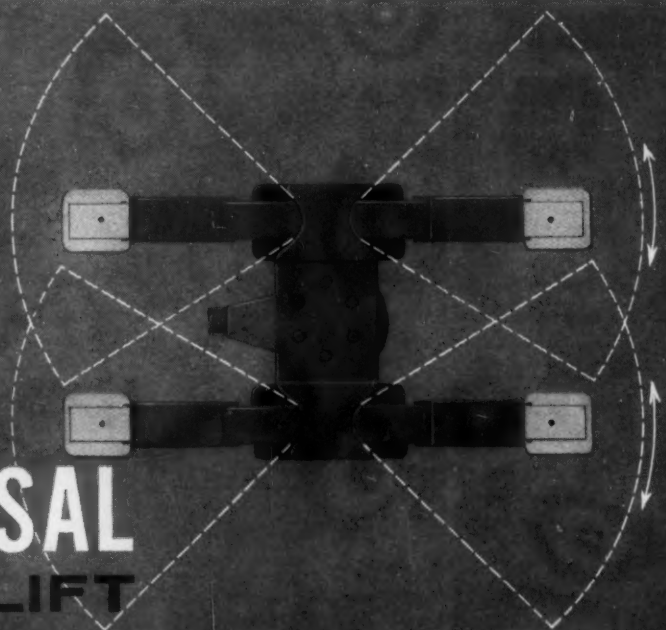
**THIRD**—by selling the two fast-moving AC Fuel Pumps included in the package, you automatically recover \$17.40. Thus, your profit from the sale of the two pumps pays for the promotion package. The Presto Fry Pan, Control Master Unit and Recipe Book offer years of "dining at the Ritz"—at home!



AC SPARK PLUG  THE ELECTRONICS DIVISION OF GENERAL MOTORS

**ORDER YOUR FPM-69 FUEL PUMP PROMOTION PACKAGE—NOW!**

# WAYNE UNIVERSAL FRAME LIFT



Lifts any car safely—adjusts to become longer, shorter, wider or narrower than any other lift!

Spot the car (*any* car)—reach in with the handy hook and position the arms—then raise the car. It's that simple and quick with the Wayne Universal.

**FLEXIBLE**—Size extended, 95 in. long, 88 in. wide—size retracted, 60 by 36 in. And it snugs down to a skimpy 4¼ in.—lowest of all lifts. All four arms move as indicated by dotted lines. Each contact pad slides down to the base of its arm. They just don't make the car you can't handle with a Wayne Universal.

**SAFE**—Accommodates loads up to 8000 lb.—but has been successfully tested at loads far in excess of this. Heavy duty bolster and sturdy arms constructed of steel plate. Safety leg with toe-touch release locks car safely at any of 6 different heights. Minimum friction packing in main cylinder lets lift move to floor after tires touch down. Uncluttered floor means added safety.

**CONVENIENT**—Lifts car frame a full 71 in. to give you ample headroom and an unobstructed view of the working area. Entire car underbody is easily accessible. You save time on lube work, muffler replacement, tire servicing, or any other repair job.

## EXCLUSIVE 4 POSITION CONTACT PADS

### Closed

Pad down for most cars



### No. 1 Position

First notch gives 1¼ in. added height



### No. 2 Position

Second notch gives 2 in. added height



### No. 3 Position

Pad set vertical gives 5¼ in. added height



Get Bulletin W-123 for full data on new Wayne Universal Frame Lift.



WORLD'S LARGEST  
MANUFACTURER OF  
GASOLINE PUMPS AND  
SERVICE STATION EQUIPMENT

*In the automotive service business...* **THERE'S NO BUSINESS LIKE CHEVROLET BUSINESS!**

**INDEPENDENT GARAGE OWNER:**

*"As a one-stop place for genuine Chevrolet parts, you sure help me save time and money."*

**CHEVROLET PARTS MANAGER:**

*"We do our best to keep a balanced parts stock. It's our way of helping you get your Chevrolet customers' cars back on the road fixed right and right on time."*

*Your Chevy dealer can help you keep profitable Chevy business rolling in. Here's why:*

1. Over 17,000,000 Chevrolet cars and trucks on the road . . . more than any other make.
2. Your Chevrolet dealer can be your one-stop source for genuine Chevrolet parts.
3. Genuine Chevrolet parts are built of the same quality of materials and to the same rigid engineering specifications as the originals.
4. Your Chevrolet dealer can offer profit-building service aids to help you serve Chevrolet owners.

CHEVROLET DIVISION OF GENERAL MOTORS, DETROIT 2, MICHIGAN



MAKE YOUR CHEVROLET DEALER YOUR PARTNER IN SERVICE

...HE IS READY, WILLING AND ABLE TO SERVE YOU!

# Champion announces a designed to give better

Special features of the new Champion UL-15Y

## AUXILIARY GAP

Allows voltage to build up to full-firing intensity, isolated from carbon deposits on firing end that drain away voltage and foul out other plugs.

## PATENTED 5-RIB INSULATOR

Reduces "flashover," gives your customers surer starting, especially in damp weather.

## ATTACHED GASKET

Real handy feature that makes installation and removal easier in hard-to-reach plug holes—saves time and trouble.

## RUST-RESISTANT PLATING

Distinctive bright finish enhances customer appeal—keeps stock looking factory-fresh.

## EXTRA-HEAVY POWERFIRE ELECTRODES

Only Champion has this chrome-nickel alloy that increases electrode life, gives your customers better performance longer.

## PROJECTED CORE NOSE

Insulator nose more fully exposed to turbulent combustion gases that burn away fouling deposits at low speeds, keeps spark plug cooler at high speeds.





# new spark plug specially performance in Corvairs!



The new UL-15Y is another example of how Champion — the spark plug specialist — designs a spark plug to deliver maximum performance in an engine. And there is a Champion spark plug that delivers top power and economy from *every* make and model of engine.

That's why you should always recommend and install Champion spark plugs in *every* engine.



CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO

# BIGGER at the business end



## Biggest Saddle

You will like this massive saddle . . . up to 7½" square . . . over 55 square inches of steel to cradle the largest differential . . . over 47% greater saddle surface. It's the safest, easiest-to-dolly, easiest-to-spot jack on the market.

# Blackhawk's new service jacks have premium quality...premium features...at no increase in price



## Bigger Lift

Blackhawk gives you *more lift* for your money . . . up to 26" . . . highest of any conventional service jack lift. Here's the one jack line that lifts every car and light truck — with equal ease.

Big where bigness counts . . . at the lifting end . . . that's Blackhawk's all-new Lifetime Line of service jacks. It's a full line, completely redesigned to meet today's needs.

In addition to the biggest saddle and bigger lift, the all-new Blackhawk line gives you bigger convenience . . . easier handling . . . ample length for quick spotting under any modern car . . . wider stance for sway-free stability . . . time-tested "**LIGHTNING LIFT**"\* to speed the saddle to the load.

All these features mean more lifting power and less handling effort on the job. What a difference when you work with a new Blackhawk jack — designed for better, safer lifting of the newest car models!

Compare these features. Compare these prices. See how Blackhawk beats them all. Ask your jobber about the Lifetime Line today.

\*The copyrighted term "**LIGHTNING LIFT**" describes fast-contact lifting for service jacks, which has been an important feature on Blackhawk Jacks since 1931.

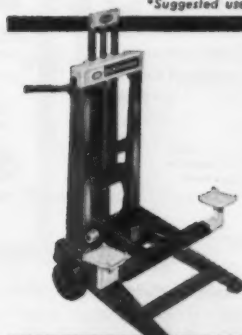
**SJ-1** (1¼ ton) Low-cost, lightweight curb jack — timesaver for every station. **\$80.\***

**SJ-2** (1½-ton) Popular, versatile, plenty of guts without extra weight. **\$104.25.\***

**SJ-3** (2 ton) Rugged performer lifts 4,000 lbs. with ease. **\$149.50.\***

**SJ-4** (4 ton) Powerhouse handles the roughest, heaviest jobs in the shop. **\$219.75.\***

\*Suggested user prices



### New One-End Lift

Big 6" wheels, perfect balance gives it maximum maneuverability. Handles every car on the road.

**SJ-26** (1½ ton) . . . **\$119.80**

suggested user price.

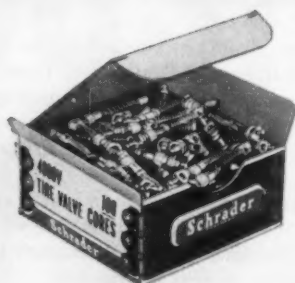


# BLACKHAWK®

DEPT. J-6-60 AUTOMOTIVE DIVISION Milwaukee 46, Wisconsin, U.S.A.

GET THE BUSINESS THAT'S THERE!...MORE TIRE SALES COME FROM  
BETTER TIRE SERVICE

# INSURE EVERY TIRE REPAIR YOU MAKE... SCHRADER DOES IT BEST!



#4000V Swivel-T Valve  
Cores packed 100 to box  
#4000MB Display box of  
100 in sets of 5



Swivel-T cores assure  
the most positive  
air seal you've  
ever made

## WORLD'S MOST RELIABLE TIRE VALVE CORE

won't ever stick—makes tire repairs safe and sure—is interchangeable everywhere—the Ace of Standardization. Put in a fresh new Schrader core with every repair you make.



#7960V Standard  
Valve Caps packed  
100 in box  
#7960MB Display  
box of 100 in  
sets of 5



#880V Standard Valve  
Caps packed 100 to box  
#880MB Display box  
of 100 in sets of 5



## WORLD'S MOST EFFECTIVE TIRE VALVE CAP

has powerful sealing unit that seals air in, dirt out. Guaranteed air tight to 250 lbs. pressure. An absolute must on repair benches for best tire service.

## SELF-VULCANIZING PATCHES

make flat fixing so easy and dependable that repair profits zoom. Make a real cured-on patch chemically vulcanized without smoke or heat.



#5072 "Fix Plats"  
Repair Kit contains  
everything you need  
to make \$140 worth  
of repair business

## SCHRADER GAUGES

are tire selling tools. Tire pressure, gauged accurately in seconds, always help you inspect for tire condition and suggest new tires. Use them every time you service any vehicle.



#8100B Trutest Gauge  
"certifies" your airlines  
and other gauges

#7188MB All-Purpose  
Service Gauge

#7750T Pencil Type Tire  
Gauge fits in pocket

*Remember: Always install a new valve with every new tubeless tire you mount.*

**Schrader**  
a division of **SCOVILL**

FIRST NAME IN TIRE VALVES

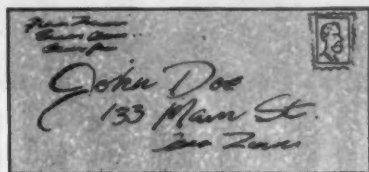
FOR ORIGINAL EQUIPMENT AND REPLACEMENT

*Made in America to American Standards of Quality*

A. SCHRADER'S SON • BROOKLYN 38, N. Y.  
Division of Scovill Manufacturing Co., Inc.



# Letters



# to the Editor

## Likes Transistor Articles

Dear Editor:

My compliments on your most enlightening articles in "Motor Age" on the "Transistor's Role in the Automotive Electrical System."

*Alex H. Du Puy  
Assistant Director  
Spring Garden Institute  
Philadelphia, Pa.*

## Owners Won't Lay up Cars

Dear Editor:

You had an editorial about why parts sales lag in a recent issue. You didn't mention the steel strike. It certainly put a dent in sales and services.

The auto is considered transportation; it gets you there and gets you back even if it is missing. A valve grind needs a day but a car owner can't tie it up that long.

What to do about the drivers of busses and trucks who won't bring them in for repairs even if they don't have to pay the bill.

*Rudolph Honkavaara  
Paul Honkavaara & Sons  
Palmer, Michigan*

## Hangs Up for Reference

Dear Editor:

When I received the April Fix Fax edition of MOTOR AGE I noticed that it was indicated on the cover that it should be hung up as a reference guide. Well I took your advice and now have it hanging

over the order write-up bench. Believe me, it certainly has been of great help to me when I need to look up car specifications.



Hole-punches issue of April 'Fix Fax' and hangs up for reference.

Even when I'm on the 'phone it is easy to refer to this Fix Fax section of the magazine. Thanks for making this issue easy to use!

*Whitey Preston  
Modern Motors,  
Phila., Pa.*

## More About Floor Plans

Dear Editor:

I understand by reading your very interesting and informative magazine that you have floor plans for automobile repair garages? I am now in an older building with two stalls and am thinking about building a new shop on my prop-

erty. The shop would be 30 x 60 ft. I would like four stalls, an office with space for waiting room, a wash room and storage room.

My property makes it possible to have separate overhead doors to each stall in the front of the building. Your help would be greatly appreciated.

*Bill Stahowiak  
Boulevard Auto Service  
Minneapolis, Minn.*

Dear Editor:

We are interested in floor plans for a medium size garage. We do carburetor, tune-up, automatic transmission and general repairs. We would appreciate having sample floor plans if they are available.

*Charles Phelps  
Phelps & Son Garage  
Duboisstown, Pa.*

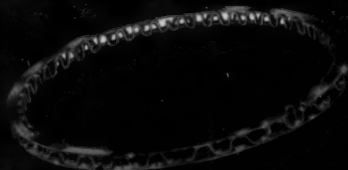
Dear Editor:

We are interested in your reply to a letter of J. M. Newsome, Jr., in your February issue requesting floor plans and layouts for a small dealership's building. We would appreciate floor plans samples of the same type building as he describes.

*Harold Landingham,  
Burke Motors, Inc.  
Ft. Bragg, Calif.*

**We are pleased with the continuing response for information on floor plan suggestions and are forwarding materials and outlines which should prove a help. (Ed.)**

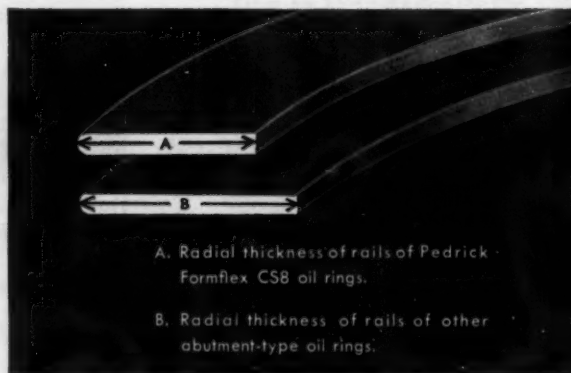
# PEDRICK'S FORMFLEX OIL RING GIVES UNEQUALLED CONFORMABILITY



***A strong statement? Perhaps, but  
there are many facts to back it up...***

## **CONSIDER JUST ONE . . .**

The 4-piece construction of Pedrick's Formflex oil ring makes it possible to use ring rails which have a radial thickness almost 20% *less* than any other peripheral-abutment type ring! So much less radial thickness obviously makes the Pedrick rails far more flexible. Greater flexibility means greater ability to conform—and, therefore, a better sealing, higher-performing, longer-lasting piston ring in *any* kind or condition of engine!



In addition, **PEDRICK FORMFLEX CHROME RINGS** are:

- Easy to install!
- Effective in Side Sealing!
- More Resistant to Plugging!
- All-Purpose—for any kind of service!
- Chrome-faced for longer life!

DEPEND ON

***Pedrick***

**FOR THE BEST RING JOB**

Wilkening Manufacturing Co., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto 2

# Redistribution POLICIES need constant improvement



**BY JOHN REYNOLDS**

Vice president & General Sales  
Manager Straus Frank Company

**T**HE automotive aftermarket is so encompassing that one might question if anything is actually new at this stage. New in appearance, yes, but history reflects parallel situations in nearly every instance.

Redistribution and warehousing, for example, have been discovered or rediscovered by many. But they are certainly not new. They have been employed as a way of business by some wholesalers and manufacturers for years. Unfortunately, however, they can, and have been, tools for better discounts in possibly too many instances.

We do detect something on the verge of newness in constantly improving policies and operations by both manufacturers and wholesalers. These

developments are not without responsibilities and challenges for both parties.

For example, we note major rubber and oil companies and other corporations of considerable stature getting into expanded TBA programs.

Others are adding such programs as well as additional parts lines.

## Importance of Policies

Policies are most important. There is a broadening of distribution of types other than automotive wholesalers by manufacturers on some lines. There are also, on the other hand, cases where outstanding companies in this country have products and policies designed especially and solely for wholesalers only.

This is most encouraging and refreshing to almost all automotive wholesalers whether they do business with such concerns or not. It is somewhat new at this point; it is a departure from what might have been a trend in recent years.

Some manufacturers have expected wholesalers support as

well as the support of new outlets that could be added. This, naturally, was a plus for the manufacturer and could be, and has been, at the expense of the wholesalers, even though accompanied by the manufacturers' story of how the move would help the wholesaler.

We note what we believe is the forerunner to new and improved conditions in our industry today. It is asserting itself policywise. There are many contributing factors to this fact. There are more liberal discussions by means of councils, conferences, one new national association, and more new state and local associations.

The understanding and appreciation both wholesaler and manufacturer have for each other's responsibilities and problems continues to contribute to our automotive industry. The few manufacturers or wholesalers not keeping up with the new concept are slightly more out of step today than they were yesterday.

These facts, among many  
*Continued on page VII*

*"We believe history has proven that  
automotive wholesalers and their  
manufacturers share together and  
similarly share alike."*

# Self-service of automotive parts at Decatur-Medart

*Mechanics browse through parts bins and avail themselves of check-out counters in this Illinois store*

At right: Herb Peyer, Manager of Decatur-Medart Distributors, Inc. ("Motor Age's" Terry McCabe visited Medart.)



THE automotive parts jobber and distributor has taken a page from the supermarket grocery book. Realizing that Americans have become accustomed to self-service procedures, some parts houses about the country have laid out their buildings and aisles to accommodate the trade through self-service.

J. "Speed" Medart in Decatur, Ill., has set up such a self-service operation. Located on East Main Street in Decatur, the firm expects a twenty-five per cent increase in business from the move.

Mr. Medart, who is vice president of Medart Auto Electric Co. in St. Louis, also operates a partial self-service operation in Columbia, Mo. Barney Lyons is sales manager of Medart Auto

Electric Co. in St. Louis, Mo.

At Decatur-Medart Distributors, Inc., Herb Peyer is manager. Herb indicates that the system in Decatur showed many advantages in the first weeks of operation. For example, the new store set-up revealed long rows of parts bins with merchandise that customers were not previously aware Medart carried.

It caused mechanics to browse about bins shoulder high. Many picked up additional items other than their planned order. And all were exposed to national manufacturers displays and a number of premium programs.

## Good Time Saver

Mechanics were quite happy about the saving in time and the

lack of a long line at the check-out counter. Some men of course prefer to be waited upon; others quickly adapted to the new system. Self-service isn't mandatory. One or two parts counter men are always on hand to aid the chap who requests it.

As "Speed" puts it, its as quick and easy as YOU want it to be. YOU look up the parts in the catalog. YOU find them; YOU check them out at the counter and YOU'RE on your way. The greatest advantage according to "Speed" is the exposure of your customers to the items in your stock. This, plus the saving in time to both the seller and the buyer results in a quicker turnover of parts with a greater variety of items being sold.

The layout of the operation



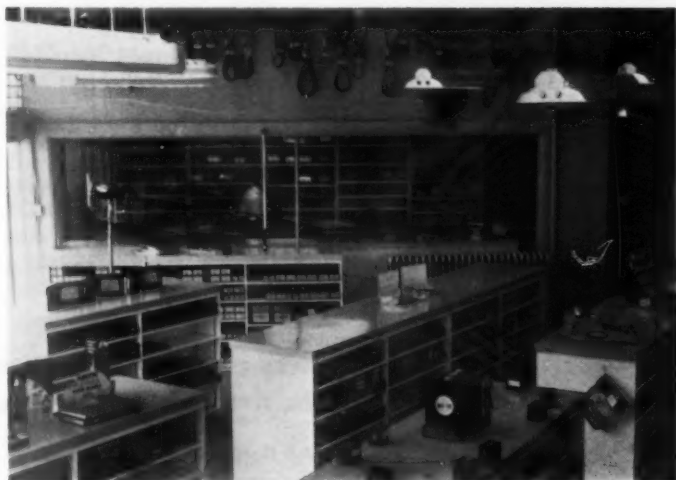


Above: Customers call on parts counter check-out man for any help or assistance needed.



At right: Check-out counter man has a complete set of catalogs as well as view of dept.

View of Medhart's store. Note waist-high display cases and the ample aisle space.



consists of standard type parts shelves and bins placed against the wall area. The floor area contains rows of low double sided display cases without the glass fronts. The counter men (one or two) are located in a circular type checkout counter in the center of the operation. They have a complete view of every corner of the room.

To date, they have no problem with pilferage and they feel that if there is any it is trivial.

Parts display counters are separated every twelve feet by an aisle. Purchasers can go in and out the aisles without going down the entire length of the passage-way. At the end of each set of bins, fastened to a hook is the appropriate parts catalog page for the parts on display. Some mechanics find it difficult

to read a parts catalog at the first crack. However, when they are instructed on how to read them by the parts men, they then prefer to do their own hunting after that.

Experience has shown Herb and "Speed" that it was well to departmentalize the layout for best traffic movement. As an example, the small engine parts

(lawnmowers, etc.) are in a section of display cases away from the regular automotive items.

They found that the small engine men knew part numbers and could pick their parts much faster than most automotive men. This is because the small engine manufacturers have trained their men in this area.

**THE**

**PULSE**

**OF**

**AUTOMOTIVE**

**BUSINESS**

# Automotive Wholesaler's Sales and Inventories

Data from the Bureau of the Census, Dept. of Commerce

| Region                  | Per Cent Change in Sales |                          |                              | Per Cent Change in Inventories |                          |
|-------------------------|--------------------------|--------------------------|------------------------------|--------------------------------|--------------------------|
|                         | Mar. 1960 from Mar. 1959 | Mar. 1960 from Feb. 1960 | 3 Mos. 1960 from 3 Mos. 1959 | Mar. 1960 from Mar. 1959       | Mar. 1960 from Feb. 1960 |
| New England.....        | ...                      | ...                      | ...                          | ...                            | ...                      |
| Middle Atlantic.....    | + 3                      | + 5                      | + 5                          | + 3                            | + 2                      |
| East North Central..... | +11                      | +10                      | +12                          | + 4                            | + 6                      |
| West North Central..... | + 1                      | +11                      | - 6                          | + 9                            | 0                        |
| South Atlantic.....     | + 9                      | + 1                      | + 6                          | + 5                            | 0                        |
| East South Central..... | 0                        | + 5                      | - 2                          | + 5                            | + 1                      |
| West South Central..... | - 3                      | + 5                      | - 4                          | +19                            | + 1                      |
| Mountain.....           | + 8                      | + 9                      | + 7                          | ...                            | + 4                      |
| Pacific.....            | +23                      | +17                      | +11                          | + 8                            | 0                        |
| United States.....      | +10                      | + 8                      | +10                          | + 7                            | + 2                      |

## Monthly Sales of Automotive Jobbers incl., Tire and Tube Wholesalers\*

All Data are in Millions of Dollars

| Month               | 1960    | 1959    | Per Cent Change |
|---------------------|---------|---------|-----------------|
| Jan.....            | \$ 374  | \$ 352  | + 6.15          |
| Feb.....            | 363     | 333     | +15.01          |
| Mar.....            | 412     | 375     | + 9.87          |
| Apr.....            | ...     | 392     | ...             |
| May.....            | ...     | 369     | ...             |
| June.....           | ...     | 429     | ...             |
| July.....           | ...     | 419     | ...             |
| Aug.....            | ...     | 405     | ...             |
| Sept.....           | ...     | 428     | ...             |
| Oct.....            | ...     | 439     | ...             |
| Nov.....            | ...     | 429     | ...             |
| Dec.....            | ...     | 379     | ...             |
| Total—Year.....     | ...     | \$4,769 | ...             |
| Total—3 Months..... | \$1,169 | \$1,080 | +10.26          |

## Monthly Sales of Franchised Car Dealers\*

All Data are in Millions of Dollars

| Month               | 1960    | 1959     | Per Cent Change |
|---------------------|---------|----------|-----------------|
| Jan.....            | \$2,577 | \$ 2,531 | +1.81           |
| Feb.....            | 2,570   | 2,450    | +8.96           |
| Mar.....            | 3,050   | 2,921    | +4.42           |
| Apr.....            | ...     | 2,492    | ...             |
| May.....            | ...     | 3,033    | ...             |
| June.....           | ...     | 3,196    | ...             |
| July.....           | ...     | 2,903    | ...             |
| Aug.....            | ...     | 2,772    | ...             |
| Sept.....           | ...     | 2,305    | ...             |
| Oct.....            | ...     | 2,956    | ...             |
| Nov.....            | ...     | 2,284    | ...             |
| Dec.....            | ...     | 2,177    | ...             |
| Total—Year.....     | ...     | \$32,472 | ...             |
| Total—3 Months..... | \$8,297 | \$ 7,902 | +5.12           |

## Monthly Sales of Gasoline Service Stations\*

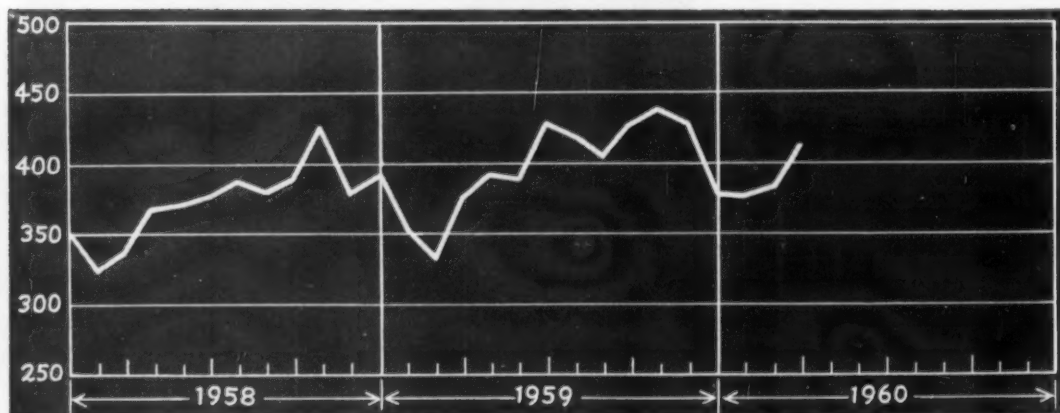
All Data are in Millions of Dollars

| Month               | 1960    | 1959     | Per Cent Change |
|---------------------|---------|----------|-----------------|
| Jan.....            | \$1,356 | \$ 1,282 | +5.77           |
| Feb.....            | 1,286   | 1,197    | +7.68           |
| Mar.....            | 1,382   | 1,318    | +4.85           |
| Apr.....            | ...     | 1,348    | ...             |
| May.....            | ...     | 1,427    | ...             |
| June.....           | ...     | 1,450    | ...             |
| July.....           | ...     | 1,516    | ...             |
| Aug.....            | ...     | 1,504    | ...             |
| Sept.....           | ...     | 1,419    | ...             |
| Oct.....            | ...     | 1,462    | ...             |
| Nov.....            | ...     | 1,433    | ...             |
| Dec.....            | ...     | 1,437    | ...             |
| Total—Year.....     | ...     | \$16,793 | ...             |
| Total—3 Months..... | \$4,024 | \$ 3,797 | +5.98           |

\* Estimated by the Bureau of the Census.

## MONTHLY SALES OF AUTOMOTIVE WHOLESALERS INCLUDING TIRE AND TUBE WHOLESALERS

(All Data in Millions of Dollars)



## Kansas Wholesalers To Organize State Assn.

Automotive jobbers throughout Kansas are planning State-wide wholesalers association. An open meeting is scheduled for June 29, 1960 in the Jayhawk Hotel, Topeka, Kansas. Wholesalers from all parts of the state will express their ideas on the benefits to be derived from such a cooperative activity for automotive distributors.

Speakers at the get-together will include Richard A. Melvin, executive assistant, A.S.I.A. and Tom Payne, executive director, Automotive Wholesalers of Oklahoma.

## Wiggins Elected Member of A.W.T.A.E.

Jack L. Wiggins, executive secretary of the Automotive Service Industry Association, was unanimously elected as an ex-officio member of the Automotive Wholesaler Trade Association Executives board. A.W.T.A.E. will hold its annual convention at Mackinac Island, Michigan, in August 1960. At that time Wiggins will join in the discussions of programs and policies.



The Automotive Electric Association recently received an award for "Outstanding Activities" from the American Society of Association Executives. The award was presented to J. Howard Reed, left, AEA's executive secretary by Joseph H. Miller, president of ASAE, at the association's office in Washington, D.C.



Officers and directors of the Middle Atlantic Automotive Wholesalers: Front row, left to right, M. Eugene Seltzer, director, Colonial Auto Supply; Carson R. Ward, secretary, Wharton and Barnard, G. H. Ibbeken, president, Hagner, Inc.; Calvin Cropper, vice president, Salisbury Automotive; George A. Gehringer, treasurer, Gehringer-Harlacker Co. Back row, left to right: R. S. MacPherson, retiring director, E. P. Rotzell Co.; Anthony M. Ruffur, director, Ace Auto Supply Co.; Frank P. Gaul, director, Gaul, Derr & Shearer Co.; Harlow Prindle, immediate past president and new director, York Auto Parts; Leonard Quinn, retiring secretary, Auto Accessory Co., Inc.; John H. Jones, retiring director, A. B. C. Company.

## Robert E. Phelps

Robert E. Phelps, president of Phelps-Roberts Corp. suffered a fatal heart attack on May 12. He was flying from his home in Washington, D.C., to Chicago at the time to attend a meeting of the Distributors Institute.

Mr. Phelps was treasurer of the Automotive Trade Association,



National Capital Areas.

In the words of Automotive Service Industry, Assn. executive secretary Jack Wiggins, "Bob was either a past president or director of many associations and groups, in addition to serving on a host of important committees."

## Franklin A. Miller

Franklin A. Miller, former director (retired) of Marketing & Merchandising for Raybestos-Manhattan, Inc., died May 18 at Ft. Lauderdale, Fla. He was 72.

Mr. Miller had been with Raybestos for 27 years.

A nationally-known authority



in the automotive field, he had been associated with Chilton Company's automotive publications prior to joining Raybestos.

He was a past director of the now dissolved National Standard Parts Assn. and a director of the Brake Lining Mfgs. Assn.



Henry C. Wehr, Jr., has joined The Saturday Evening Post as marketing manager, Automotive Service Industry. He was formerly an account executive at Wilding, Inc., in Detroit.

#### **NCAWA To Select "Mr. Carolina Booster 33"**

In cooperation with Booster Club, B-33, the North Carolina Automotive Wholesalers Association, Inc. members are asked to select "Mr. Carolina Booster 33" of 1960. The following qualities are to be considered in the selection. Knowledge of his product; Know-how of service; Catalog up-to-date; Does he expand his market?; Does he keep up with the current trends in business?; Does he "sell" himself and his employer?; Does he live up to the Booster creed in service?

#### **AEA's Plans for 1960**

The Automotive Electric Association announces its 43rd annual meeting and 24th annual Manufacturers-Distributors Conference. It will be held at the Edgewater Beach Hotel in Chicago, December 2-9, 1960.

#### **Ira Saks to Direct Spring Research Institute**

Ira Saks was appointed executive director of the Spring Research Institute to succeed Roy Burton, who resigned due to ill health. The headquarters of the Institute will be moved to 1008 Standard Building, 1370 Ontario St., Cleveland 13, Ohio.



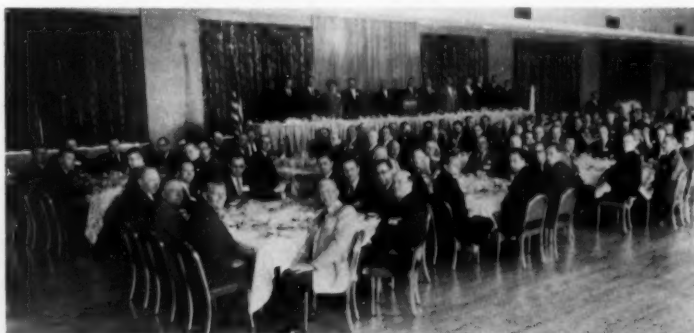
Shock absorber checks during clinic at Oil City, Pa., showed every other car in need of shock absorbers reports Steve Kaywood, right, of Monroe Auto Equipment Co. He is shown with Weaver Buick's service manager. (For more on shock absorber market, see "Motor Age's" feature, p. 38, "Money Slipping Thru Your Fingers.")

#### **ASIA Issues Directory**

The first edition of the Automotive Service Industry Association's Membership Directory lists over 5,000 firms throughout the United States and Canada.

Member firms of A.S.I.A. are comprised of wholesalers, manufacturers, warehouse distributors and rebuilders.

Each group is listed separately in the directory, first by state, then city or town. Then by firm name, alphabetically. The directory shows member-company names, addresses, telephone numbers, delegates and titles, as well as company branch stores and affiliated firms. The format facilitates ease of reference and filing.



This year's tremendously successful Southwest Automotive Show in Dallas was highlighted by a round of pre-convention activities. One such event was the luncheon sponsored by the Automotive Booster Club (B-4) (see above). Booster Club International president Joe Del Greco and executive secretary Gretchen Rider were among dignitaries present. Other events included an Automotive Affiliated Representatives dinner under the direction of S. M. McClintock, Southwest Regional Director, with B. B. Burk serving as master of ceremonies. The Show itself was run by the Southwest Automotive Show Board of Directors (Yancy Robertson, president). Show manager was A. L. Barnett.



## Redistribution . . . . . Continued from page 1

others, spell out a need for following some basic and elementary rules. They are not of the nature that can be imposed on anyone, but must be by one's own choice.

They must be designed for the benefit and welfare of both manufacturer and wholesaler alike.

They must be equally fair and contribute to both segments, yet must be acceptable to each. Generally, they are in the area of ground rules that apply in almost any competitive situation.

The rules must be the same for everyone if the most is to be gained by the majority. Certainly as long as we have people, we will have those who attempt to engineer the rules for their own particular gain and benefit at the expense of someone else.

### Time For New Policy

It would appear that it is time for a new policy. Under this policy oil companies, rubber companies, car manufacturers, and concerns other than the wholesaler, should be included in the same sphere as the wholesalers as regards the handling of duplicate lines of merchandise, terms of purchasing, and the same opportunity of fair and equal competition. Fleet policies, while they may be questioned as to whether they contribute appreciably to the manufacturers welfare, might be pointed to with pride instead of defended by some manufacturers solely because they are following someone else.

They usually claim they are leaders, not followers. The exception might be when they find it more tactful, policywise, to become followers instead of leaders. The newness in policies we see is more a case of some

manufacturers standing behind their policies and supporting them instead of hiding behind them.

Certainly the wholesalers have room for more improvement in the policy department. We would question if there are many wholesalers intelligently expecting to keep an unfair advantage for themselves in some off-color deals.

Most wholesalers want to know when a manufacturer is going to sign another outlet in their area on any of the major lines. Shouldn't the wholesaler likewise tell the manufacturer when he is going to change a line?

We believe history has proven that the automotive wholesalers and their manufacturers share together and share alike. If either strays too far from what's good for the other, they both lose. We believe the acceptance of this fact alone had much to do with the unifying of our industry into the new Automotive Service Industry Association.



Actress Barbara Wilkin, "Miss Safety in Speed," helps William S. Simpson, vice president of Raybestos-Manhattan, Inc., accept delivery of the new Raybestos Award. Award has subsequently been presented to the owner of the winning car in the Indianapolis 500-mile Memorial Day race.



## INDUSTRY MEETINGS

June 20-July 5—2nd annual International Auto Show to be held during 1960 Chicago Trade Fair, Navy Pier, Chicago, Ill.

June 20-22—Pennsylvania Automotive Assn., Bedford Springs Hotel, Bedford, Pa.

July 7-9—Independent Garage Owners of America 5th annual convention, Dinkler Plaza Hotel, Atlanta, Ga.

July 21-23—Automotive Trade Assn. Managers summer meeting, Grand Hotel, Mackinac Island, Mich.

Oct. 10-12—Automotive Parts Rebuilders Assn. annual convention, Conrad Hilton Hotel, Chicago.

Oct. 15-23—National Automobile Show, Cobo Hall, Detroit.

Oct. 16-21—American Trucking Assn. annual convention, Waldorf Astoria Hotel, N.Y.C.

Oct. 23-25—New Jersey Automotive Trade Assn., Chalfonte-Haddon Hall, Atlantic City, N.J.

Oct 28-Nov. 2—Florida Automobile Dealers Assn., Cruise to Montego Bay and Port-au-Prince.



"Motor Age" technical editor Jack Montgomery presents "Motor Age" trophy to Jim Hurtubise, right, for fastest qualifying lap at Indianapolis this year.

# Motor Age's

## WHO'S WHO

**William L. Carlson** has been appointed marketing manager, Delco battery for United Motors Service Division of General Motors.

**John P. Henson** has been named sales manager of Dana Corporation's Universal Joint Division.

**John M. Jurist** has been promoted to district manager for the West Coast area by the "Pop" Rivet Division of United Shoe Machinery Corporation.

**F. R. "Pete" Middleton** has been appointed sales manager of the Replacement Division of Monroe Auto Equipment Company,

**D. L. Bohon** has been appointed manager of industrial sales for The DeVilbiss Company.

**Donnell G. Nixon** has been named by Sealed Power Corporation as the firm's automotive division zone sales manager in the Chicago and eastern Wisconsin area.

**William C. Ray** has been named general manager of The Electric Autolite Company's Battery Division. He was previously controller for Autolite's seven plant battery division.



The Electric Storage Battery Company's Automotive Division has announced the following appointments. **Harry N. Roberts**, vice president-Marketing; **James F. Mitchell**, vice president-Engineering; **Wm. A. Healy**, vice president-Manufacturing; and **Robert W. Getter**, vice president-Administration.



**Robert Price**, left, has been appointed product merchandising manager for the Battery Division of The Electric Autolite Company. **Karl Chalmers** has been appointed product merchandising manager, Service Parts Division for the company.

**Edward H. Tutun** has been appointed manufacturing manager of The Vellumoid Company. The company is a subsidiary of W. R. Grace & Co. operated by its Dewey and Almy Chemical Division.

**John F. Carr** has been appointed director of contracts for AC Spark Plug, the Electronics Division of General Motors in Milwaukee. He succeeds **Alvin B. Goodspeed**, who was promoted to director of sales for AC-Milwaukee.

**Gerald E. Veino** has been appointed manager of product forecasting and sales analysis for Dole Valve Company.

**Samuel J. Somberg** has been elected vice president in charge of Sales of the Lee Filter Corporation. He will also be in charge of advertising and merchandising of the Lee line.



**Roy E. Davis** has been appointed regional sales manager for the southern region by Aluminum Industries, Inc.

**A. L. Caney** has been appointed manager of consumer products-sales for Dana Corporation's Parish Pressed Steel Division.

**Frank B. Graper**, photo, has been appointed to the post of assistant general manager of Dana Corporation's Standard Equipment Division. **Frank A. Saltzgiver** has been appointed manager of operations and distributor sales for the Corp.



**Carl E. Widdell**, photo, has been elected vice president in charge of Marketing by the Wagner Electric Corporation. He succeeds **Harold N. Felton** who will remain with the company as vice president in an advisory and consulting capacity.



**Thomas W. Lawless**, photo, has been appointed purchasing agent of Weaver Manufacturing Co., division of Dura Corporation. He succeeds **Orville W. Ellis**, who is retiring.



# newscoop

*Changing Auto Market  
Aluminum Engine For AMC?  
New Catalyst Tested  
Economic Outlook 1960  
Blue Laws Reviewed  
Minimum Wage Problems  
Federal Highway Program*

## In the days ahead . . . . HERE'S WHAT TO LOOK FOR !!!

(Items gathered and edited by Ed Janicki, Bill Montgomery and Neil Regeimbal)

### GM Will Add Three More Compacts This Fall

THE LONG SILENCE HAS BEEN BROKEN. General Motors last month confirmed reports that it will add three more compact cars to its lineup sometime this fall.... They'll be sold by Buick, Oldsmobile and Pontiac dealers.

No details were given, other than the names of the new editions. They will be called Buick "Special," Pontiac "Tempest," and Oldsmobile "F-85".... Cars are expected to carry a price tag in the area of \$2000.... Special equipment, taxes and other charges could push the price up into \$2600-\$2700 range.

### Rapidly Changing Auto Market



THE AUTOMOBILE MARKET CONTINUES to gyrate violently.... In past four years it has spun dizzily.... New models were born; they died quickly.... Old names are now buried in oblivion.

It took only four years and some small imports to bring swift changes.... Henry Ford II, president of Ford Motor Co., recalled some of the changes at last month's stockholder's meeting in Detroit.... For more than two decades, he noted, the market had been dominated almost completely by two price classes—low and medium.

During those years traditional low price group averaged 56 per cent of market.... By first quarter of this year, Ford observes, market share of that group declined to 47 per cent.... Medium-price group meanwhile has tumbled from an average 40 per cent to 21 per cent.... And a hardly noticeable group including imports and smaller U.S. cars quickly skyrocketed from a wee 4 per cent to a whopping 32 per cent!

### Falcon Sales Zoom

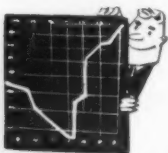
IN LESS THAN ONE YEAR FALCON'S share of market has zoomed to a tidy 7.1 per cent of industry total.... That's nearly equal to combined share of all foreign cars sold in the U.S. two years ago.... Ford notes Falcon is now outselling all but one competitive car by at least two to one.... However, it's yet to top Rambler, which took 8.2 per cent of market in April vs. Falcon's 7.1 per cent.

## No General Increase In '61 Car Prices

FIRST HINT THAT 1961 CAR PRICES will remain about same comes from S. E. Knudsen, Pontiac's general manager.... While it's conceivable that some companies may alter certain price structures, Knudsen sees no "general increase."

Fact that steel prices have remained stable enters into auto industry price picture ... There has been some indication that steel prices could still rise at the end of the year. That, of course, would have an influence on automobile pricing.

## Dodge Sales Helped By Dart



DODGE GENERAL MANAGER M. C. PATTERSON last month confirmed reports that its upcoming compact car will be called the Lancer.... Motor Age first reported name last February.... Patterson says Lancer will be assembled in Hamtramck, Mich., Newark, Del., and St. Louis, Mo.

Total Dodge sales, nurtured by highly successful Dart, are continuing at a jubilant pace.... Retail sales since introduction are 132 per cent ahead of the like period a year earlier.... Question asked by many now: What will happen to standard Dodge series when Lancer leaps in? Dodge dealers will have three series of cars to sell in same family—Dart, Lancer and the Dodge.

## Aluminum Engine For AMC?

AMERICAN MOTORS MAY JOIN THE ALUMINUM engine bandwagon next year.... Company reportedly has a new OHV in-line six-cylinder powerplant in works for its 1961 models.... It'll have horsepower in the area of 120-125.

Chrysler, incidentally, has revised its timetable for aluminum engines.... They were originally scheduled to go into production in July... It has built a few of them, but these are being installed in corporation-owned cars for field tests.... A few of them have been consigned to fleet operators.

## Catalyst For Eliminating Exhaust Hydrocarbons Tested



A "NOVEL CATALYST" THAT HAS PROVED "highly effective" in laboratory studies may provide effective method for eliminating smog-producing hydrocarbons from motor vehicle exhaust gases, Glenn W. Thompson, president of Arvin Industries, Inc. announced.... For past two years company has sponsored a research program in the development of a catalyst with proper tempera-

ture and life characteristics.

Dr. Louis J. Hillenbrand, Jr., catalytic expert and leader of group conducting research, describes catalyst as being "unlike any of the ones reported by others working on this problem.".... He stated that it does not become deactivated or "poisoned" by lead additives in gasoline.... These additives, essential components of modern automobile fuels, long have been the main stumbling block in efforts to develop a widely useful catalyst for elimination of auto exhaust hydrocarbons it was pointed out.



## No Plans To Revive Packard

STUDEBAKER-PACKARD has no plans to revive Packard car.... So why keep name, some ask? S-P President Harold E. Churchill indicated recently that name may be dropped from corporate name and other nameplates.

## Future Site For National Auto Show

WILL NATIONAL AUTOMOBILE SHOW remain as a permanent Detroit fixture? No one knows yet definitely.... Officials of Automobile Manufacturers Ass'n. are too busy trying to make October show a success to think about next year's.... There's been some hallway chatter, though.... Probable site for next year's factory-sponsored show: New York.

## Nine Month Sales Above Previous Months

SALES OF GASOLINE AND TBA showed mixed trends in early part of year.... As indicated by federal excise tax collections, gasoline sales were up in first three months of this year over last year, as were sales of parts and accessories.

Lubricating oil sales were about the same; tires, tubes and tread rubber sales slipped a little.... For first nine months of current fiscal year, which ends June 30, sales of all items were above previous 12 months.

## Economic Outlook Is Good

SLOWLY RISING ECONOMIC ACTIVITY with slight additional inflation is outlook for rest of year.... Top government economists say production will rise from present \$500-a-year annual rate to about \$510 billion by year-end.... Sales and personal income will keep pace in leisurely rise.

Home building is due for a slow but steady rise through summer.... Even farm income may show a little more strength through summer and fall.... Car sales should continue to rise and show strength after model change, they say.



**Neil Regeimbal**  
*MOTOR AGE's News*  
Editor, Wash., D.C.

## No Increase In Gasoline Tax

THERE WILL BE NO INCREASE IN federal gasoline tax this year.... Congressional leaders have made it clear they aren't going to boost tax with election coming up.... President Eisenhower touched off the clear refusal by repeating his request for another half-cent boost in gas tax, which would bring to 4½ cents.

## Blue Laws To Be Reviewed

LEGALITY OF STATE SUNDAY BLUE LAWS will be settled by U.S. Supreme Court.... High court has agreed to review constitutionality of these statutes in Maryland, Massachusetts, and Pennsylvania.... But decision will affect all such Sunday-closing laws.

Businessmen wanting to open seven days a week have challenged these laws, which date to Colonial days, without much success.... This will be the first Supreme Court review of blue laws since 1900.

## **Service Station Industry Against Raising Minimum Wages**

CAR SERVICE INDUSTRIES ARE FIGHTING HARD against proposals pending in Congress to raise and extend the minimum wage.... Nature of service station industry would mean requiring that workers be paid a minimum of \$1.25 an hour plus time-and-a-half for overtime for more than 40 hours "would be ruinous".... This was brought home to House Labor Subcommittee recently by R. A. Wagener, executive director of the Cambria Country (Pa.) Retail Gasoline Dealers Association.

Union-backed measures would require disputed boosts in program.... Eisenhower Administration favors a more modest increase to \$1.10 or \$1.15 an hour, coverage only of the 3 million workers of large retail and chain operations.

## **Controls Over Car Sales and Financing**

"MODEL" LEGISLATION CLAMPING STRICT CONTROLS over car sales and financing practices is in effect in Washington, D.C.... NADA-backed law applies only to Nation's Capital—but it's supported for other communities to control unscrupulous car sellers which hurt legitimate dealers.

Provisions require dealers and finance companies to be bonded; require installments in substantially equal amounts to prevent "balloon" deals, set-maximum charges on financing at \$8 per \$100 per year on new cars, \$11 on cars up to two years old, \$14 on cars up to four years old, and \$16 on older cars.

## **Even Pace For Highway Construction**

HIGHWAY CONSTRUCTION UNDER federal road program should continue at an even pace for next two years at least.... In spite of financing difficulties and efforts by some to cut program back, Congress is not expected to order any slowdown.

The House has passed legislation authorizing apportionments of \$2.089 billion for highways in the next two fiscal years.... Included was \$925 million for so-called ABC roads.... Totals are about the same as current year.

## **Number Of Accessories Create Power Problem**

EVER-GROWING NUMBER OF ACCESSORIES is pushing engineers to develop some other means of powering them.... One solution is a small, auxiliary engine to reduce gasoline consumption.

Closest to this is a small-bore electric engine which would be connected to a D.C. generator.... It would supply power for air conditioning, power steering, power windows and all the other gimmicks.

## **Cost Of Painting Truck Bodies Taxable**

COST OF PAINTING AUTOMOBILE TRUCK BODIES is subject to manufacturers excise tax.... Internal Revenue Service rules (Rev. Rul. 60-80) that normal painting of truck bodies is part of expense of making vehicle ready for sale even when listed separately.... However, cost of special painting or lettering, if contracted for and billed separately, is not taxable.

# INDIANAPOLIS REPORT

*Rathmann noses out Ward  
in Memorial Day Classic*



**Winner Jim Rathmann** wears grime of grueling race just after entering victory lane. He averaged 138.767 mph; set new mark in race.



**Duel in final laps** was between runner-up Roger Ward (in racing car at left) and eventual winner Jim Rathmann.

**Fastest qualifying lap** honors went to Jim Hurtubise. He was awarded the annual MOTOR AGE trophy for this feat. His single lap speed was 149.601 mph.





**Lost shock absorber sales**

# **MONEY SLIPPING THRU YOUR FINGERS**



**S**ALES of replacement items are a vital part of any automotive service business dealing with the car-owner public. In the matter of profits, it can mean red or black ink at year's end. And yet, studies and surveys of replacement market items show time and again that profit potentials are not being properly explored.

Take SHOCK ABSORBER sales for example. Here the picture shows a good deal of room for improvement at the car dealer, general repair or service station owner level.

Let us look over a few figures from comprehensive and detailed study of the shock absorber market conducted not too long ago by National Analysts, Inc. (at MOTOR AGE'S request).

First item we uncover is that 3 out of every 4 general repair shops, (76 per cent), handle shock absorbers. Car dealers, on the other hand, show a higher percentage, 86 per cent.

#### Low Percentage Here

Service stations show up poorly in contrast. Only about 1 out of every 4 service stations, (23 per cent), handles shocks. Automotive service specialty shops are slightly higher, (32 per cent), or about 3 out of every 10 shops.

Now the Big Question: OUT OF THE BUSINESSES HANDLING SHOCK ABSORBERS, WHAT ARE THE FREQUENCIES OF INSTALLATIONS OR SHOCK JOBS?

Let's look first at the general repair shop. In a week's time, over half of this group performs no activity in shock absorber sales. Specifically, 3.7 out of 10 shops do at least two shock installations a week and 4.8 out of 10 make at least one installation in this same week's period.

This means that even half of the general repair shops don't begin to sell any shocks until practically two weeks go by.

Car dealers fare better. Seven out of 10 do more than one shock job per week: 8 out of 10 make at least one sale in a seven day period; and 9 out of 10 make at least one installation in two weeks.

#### Follow Similar Pattern

Service stations make sales of shock absorbers much in the same pattern of frequency as the general repair shops. More than half of the service stations do no installation of shocks in a week's time. In a two-week period about 6 out of every 10 service stations handling shocks make at least one installation.

Automotive service specialty shops show a concentration of sales percentage during the one week period. Here 73 per cent make at least one sale a week and 63 per cent make more than one sale during the same week.

In summing up these figures we must repeat again: The vast potential for shock absorber sales is simply not being realized. It is like money slipping through your fingers. Active merchandising is the answer.

How do you go about it? For one thing, almost all cars owners are uninformed about the grave danger from leaking or worn shock absorbers as regards handling or steering of the car.

Don't say "Mister your shocks are leaking, can I replace them for you?" The answer you'll get will more than likely be "No" or "Some other time."

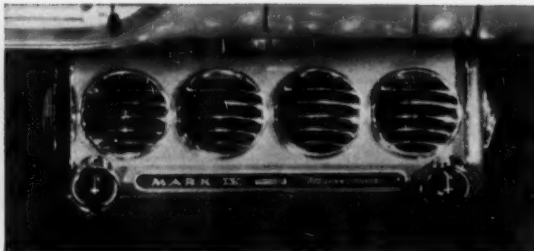
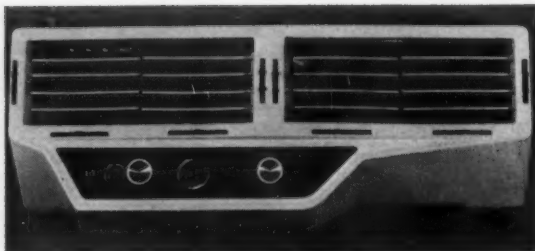
However, if you say, "Mr. Jones, you'll drive a lot with the wife and children this weekend, you sure wouldn't want to take chances with these bad shocks. I'll have them

*Continued on page 110*

*A penetrating report to car dealers, to  
general repair shops, and to service stations  
about the unrealized market  
potentials of shock absorber selling*



By FRANK P. TIGHE, Editor of MOTOR AGE



## A market report on AIR CONDITIONING



By WM. H. WOLFE  
Managing Editor

*Sales reached half million in 1959.*

*Even greater demand this year should set new record*

**L**IKE the beanstalk that shot up overnight, the market for automotive air conditioning has been sprouting vigorously since the early 1950's.

In 1953, for example, total market sales reached only 45,000 units. But the figure doubled the next year. And that sum itself doubled the following year—1955.

### Over Half Million Last Year

The count is in for 1959. Over a half million units were sold (581,000). Estimates for 1960 are even rosier.

Who is making the automotive air conditioners? And who are installing them? To begin with, units installed either by the new car dealer or at the new car factory account for six out of every 10 automotive air conditioners sold.

New car dealer installations alone were around 86,000 units last year. (Or about a

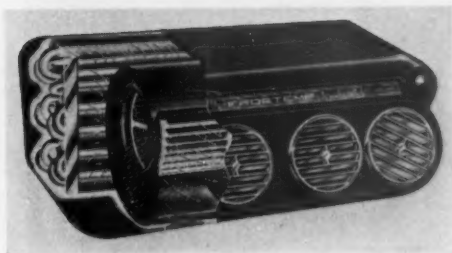
ratio of 1 to 4 compared with new car factory installations.

### Account for 4 of 10

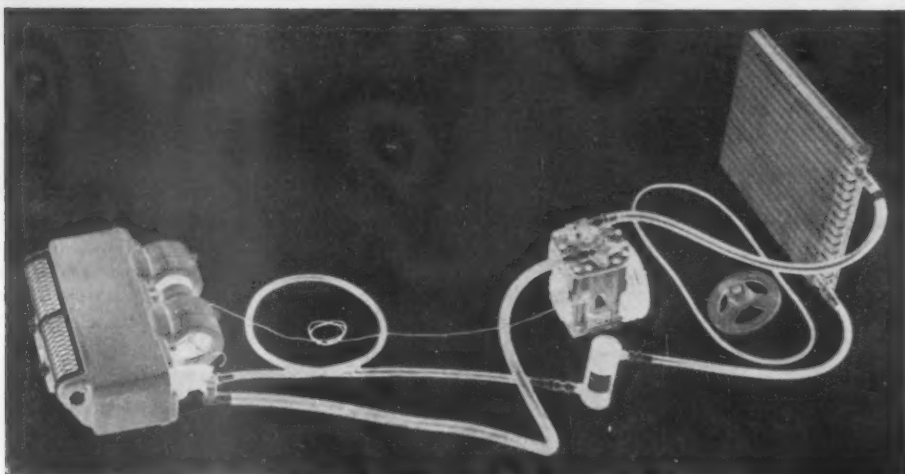
The independent automotive air conditioner manufacturers—who account for about four out of ten of all units sold—posted sales of 158,000 units in 1959. This was a respectable 10.5 per cent increase over total independents' sales in 1958.

"The picture is even brighter for 1960" reports Todd Merrill, executive director of the Automotive Air Conditioning Manufacturers Association. This Association has its headquarters in Dallas, Texas. (In the Southwest are located the largest number of independent automotive air conditioning manufacturers.)

Mr. Merrill indicated that independent sales are moving along at a high rate thus far for 1960. Projections for year-end point to practically twice the sales of any recent year.



Photos depict models of several manufacturers in after-market: Below: Novi unit showing evaporator, compressor, and condenser. Near left: partial cutaway of Lindustries evaporator. Facing page, center: dash-mounted evaporator model of John Mitchell Co. Far left: evaporator of unit made by Eaton Mfg. (Listing of other independent manufacturers on page 104).



Car factory officials are likewise optimistic about 1960 sales. E. M. Barden, general sales manager for Chrysler and Imperial, expects that air conditioning installations will more than double in the next three years. He has reported that the total sales of both divisions have jumped from 8.7 per cent in 1957 to 16.7 per cent at the end of January this year.

#### Imperial Installations

During the same period, installations on the Chrysler Imperial rose from 30 per cent to 44 per cent.

The Ford Division of Ford Motor Co. expects to write-up an additional 16,500 orders. Buick's factory installations are already up 5 per cent; Pontiac is estimating 42,000 units to be sold this year.

An interesting report from six of the independent automotive air conditioning manu-

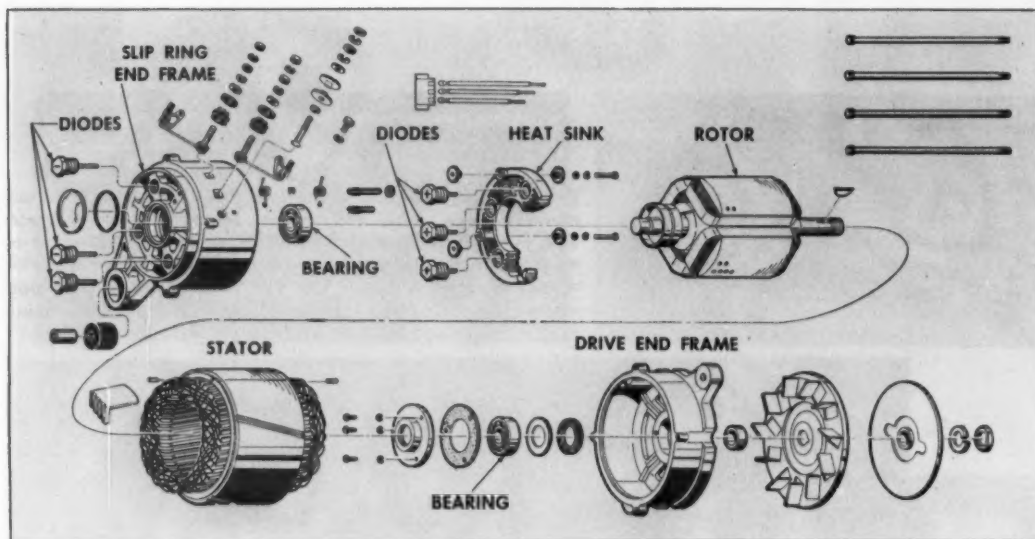
*Continued on page 104*

#### AIR CONDITIONER SALES ESTIMATE

| Auto Manufacturers               | 1957    | 1958    | 1959    |
|----------------------------------|---------|---------|---------|
| <b>General Motors</b>            |         |         |         |
| Buick.....                       | 35,000  | 29,586  | 27,116  |
| Cadillac.....                    | 46,476  | 41,804  | 54,015  |
| Chevrolet.....                   | 38,000  | 40,000  | 79,218  |
| Pontiac.....                     | 12,380  | 9,000   | 37,279  |
| Oldsmobile.....                  | 38,933  | 40,093  | 63,100  |
| <b>Chrysler</b>                  |         |         |         |
| Chrysler, Imperial.....          | 19,429  | 11,270  | 13,754  |
| De Soto.....                     | 5,102   | 2,960   | 3,488   |
| Dodge.....                       | 8,674   | 6,100   | 6,833   |
| Plymouth.....                    | 10,415  | 7,700   | 9,770   |
| <b>Ford Motor</b>                |         |         |         |
| Ford.....                        | 17,000  | 26,994  | 78,491  |
| L-M.....                         | 24,213  | 19,346  | 35,000  |
| <b>American Motors</b>           |         |         |         |
| American Motors.....             | 6,301   | 6,237   | 14,358  |
| <b>Studebaker-Packard</b>        |         |         |         |
| Studebaker-Packard.....          | 171     | 181     | 672     |
|                                  | 263,074 | 241,211 | 423,094 |
| <b>Independent Manufacturers</b> |         |         |         |
| A R A Mfg. Co.....               | 15,100  | 23,591  | 24,700  |
| Clardy Auto A C Co.....          | 6,800   | 6,500   | 8,700   |
| Climatic Air Sales.....          | 2,000   | 3,500   | 6,000   |
| Eaton Mfg. Co.....               | na      | na      | 2,850   |
| Frigicar Corp.....               | 22,100  | 21,652  | 30,066  |
| Parkmat Sales Co.....            | 7,850   | 7,500   | 8,000   |
| Seers, Roebuck & Co.....         | 3,500   | 5,000   | 5,000   |
| J. E. Mitchell Co.....           | 22,900  | 28,483  | 54,361  |
| Forston Co., International       |         |         |         |
| Auto Air Cond. Co., Kauffman     |         |         |         |
| Air Cond. Co.....                | 62,080  | 48,430  | 17,350  |
| **Others.....                    | 142,830 | 142,656 | 157,627 |
|                                  | 405,404 | 383,867 | 580,721 |

\* Reported jointly by Automotive Air Conditioning Manufacturers Association

\*\* Auto-Temp, Capitol Refrigeration, Cartrol, Frigiquip, Koel Engineering, Lindustries, Novi Sales, Mobil Air Mfg.



Exploded view of Delco-Remy alternating current generator showing relationship of all parts.

## Testing Delco-Remy's new a.c. GENERATOR

*Step-by-step procedures  
for conducting tests of  
the alternator components*



By **TERRENCE McCABE**  
Service Editor

**A**LTERNATORS and their function have been described previously in some of the recent issues of *MOTOR AGE*. Specifically, we are interested in discussing the service procedures on the Delco-Remy alternating current generators. They are constructed very similar to most alternators. They appear somewhat like the conventional DC generator. However, some major changes have been made.

The brushes found in the alternator are comparatively small in comparison to the DC unit, and are of a heavier carbon content. You'll find that the fields have a great number of fine turns of wire, and the stator windings are heavy turns of wire, mounted into the laminated core that forms the generator frame.

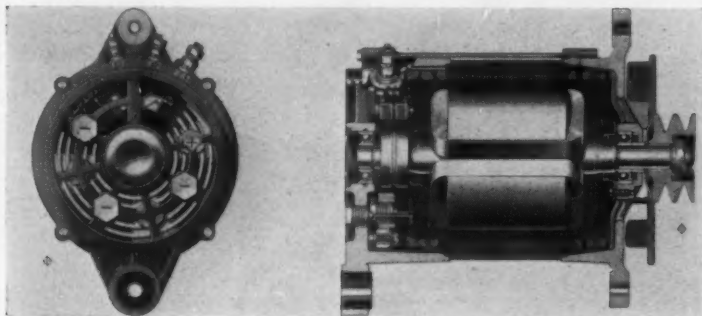
Mounted in the slip-ring end frame are six rectifier diodes, three positive and three negative. The diodes, of course, were explained

*Continued on page 44*





Dick Riggs, long experienced with alternators, holds brush rigging with bolt while lowering slip ring end frame over rotor and stator.

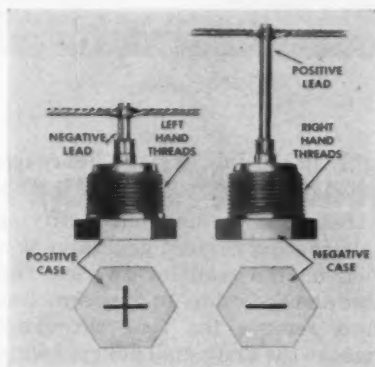


Slip ring end view and crosssectional side view of the Delco-Remy alternating current generator.

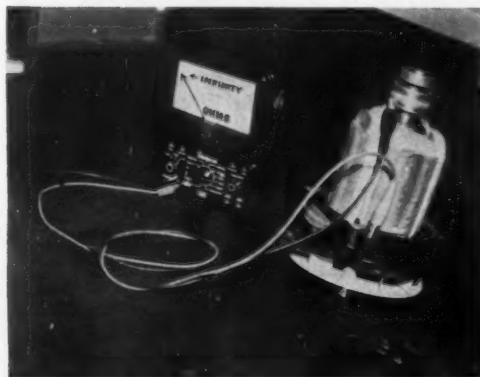


Checking rotor fields for shorts and opens.

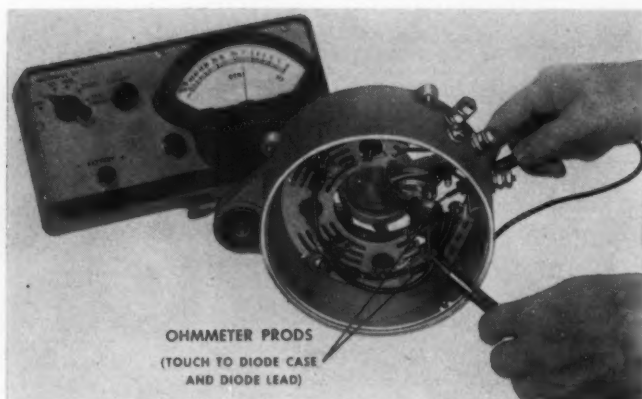
Stator case dowels and nylon stator connector.



Views of the silicon diodes. Note the right and left hand threads on the diode casings.



Testing rotor fields for grounds with ohmmeter.



Using ohmmeter to test resistance of diodes.

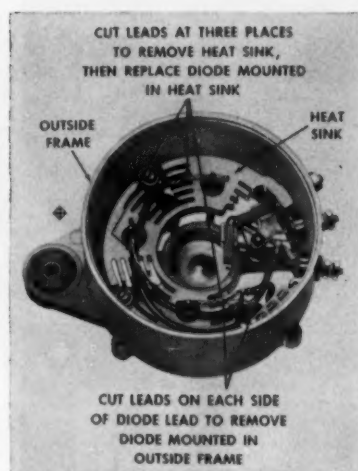
## Delco-Remy . . . . .

thoroughly in the January and February and March issues of **MOTOR AGE**. It is these diodes, that make the unit self-rectifying.

The alternating current generator is made up of four main assemblies, two end frames, the stator and the rotor. In disassembling the unit, first remove the four through-bolts. Then remove the drive end, pulley, frame and rotor assembly. Prior to removing this unit use one of the through-bolts as a tool. Slip it through the opening in the slip ring end frame, and hold the brush assemblies from the slip ring to prevent damage to the brush assembly.

The rotor can be removed from the drive end frame, by removing the shaft nut, pulley and fan. Next remove the Woodruff key. Then press the shaft out of the bearing. Remember, to support the inner race of the bearing when pressing the shaft from the bearing, otherwise severe damage will occur to the bearing assembly.

When reinstalling the bearing, remember again to exert your pressure against the inner race of the bearing, and not on the outer. After removing the drive end frame and rotor assembly, the slip ring end frame can now be removed from the stator assembly. Use a screw driver, or some means of prying apart the two halves of the nylon connector, before completely separating the slip ring end frame and the stator assembly.



In soldering diode leads hold temperature of soldering operation to a maximum of 360°F.



Check brush spring tension at 15 ounces.

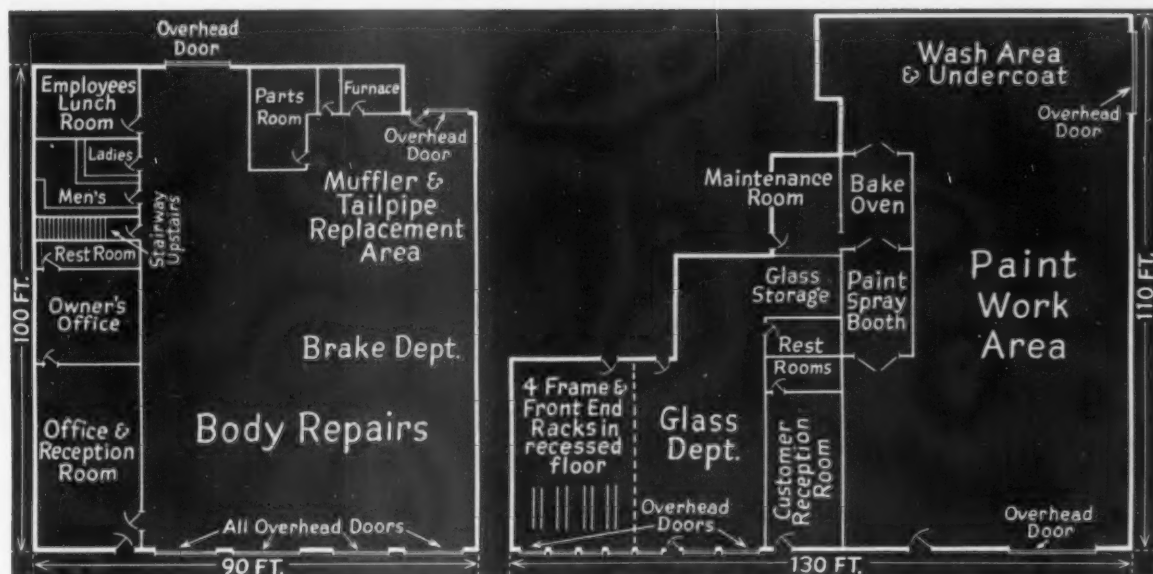
This feature of the nylon plug-in connector is unique in alternator construction. It assists in rapid assembly and disassembly of the slip ring end frame and stator assembly. After washing off the components, blow them dry with air, then proceed to check the individual assemblies.

### Checking Rotor

The rotor can be checked in a conventional manner for grounds, opens or short circuited coils. To check for grounds generally a 110 volt test light is satisfactory.

Test from either one of the two slip rings to the rotor shaft, or to the laminations. If the light lights, the fields are grounded; no light indicates satisfactory fields. An Ohm-

*Continued on page 94*



## Shop Planning

**P**LANNING to expand into two or more buildings? Here are excellent floor plans of Ralph Bryson's successful body repair business. The three buildings are located in Madison Heights, Mich. The original body shop was completely rebuilt. There is a separate building for painting and another building for glass replacement and alignment work. The three buildings cover an area of 17,000 sq. ft.

The repair shop offers wheel aligning, wheel balancing, wheel straightening and frame straightening. Available for these services are three frame men and four frame machines. Other services offered in the three buildings are auto body repairs, glass installation, radiator repair, body painting, muffler and tail pipe replacement and brake relining. Two wreckers are on hand for road emergencies.

These buildings house work areas for 16 body men, 6 painters, 6 sanders, 6 office workers, 3 front-end-and frame men, 2 glass men, 1 radiator man, 1 wrecker driver, 2 cleanup men and a maintenance man.

# Merchandising IDEAS for Successful Selling

*Start profits ZOOMING by using sales  
promotions keyed to vacation travel!*



By WM. MONTGOMERY  
News Editor

**Free Engine Analysis**—Invite motorists to your garage for a free engine analysis with no obligation. Each car's engine can be scientifically tested with an oscilloscope. Make recommendations when trouble is located.



**S**UMMER merchandising can give your place of business a big sales boost. Spring and early summer provides, probably the most receptive market of the selling year. With the coming of warm weather, buyers are in a more receptive mood. Vacation time is coming up. Your customer will want to get his car in shape, mechanically and appearance-wise.

Psychologically this is the ideal time to sell

**Signs Point To Service**—Park a car in front of station. Decorate it with arrows pointing out special mileage services. Arrows pointing to wheel bearings and oil filter remind customers on the need for lubrication and clean filters.







**Compact Car Service**—Provide a complete line of "compact" car services. Let small car owners know that you're equipped to handle all phases of service work on their cars. A sign advertising these services will attract customers.

him on sales and service. Promotions and attractive attention-getting merchandising will help convince him that the time for a Fix-Up—Clean-Up is NOW!

Sales promotions combined with advertising is the tool to use in getting business into the shop or service station. It tells the buyer how and where to get the best in service and merchandising items for his car. The place

*Continued on page 80*

**Uncovering Muffler Defects**—When a car pulls in, note condition of tail pipe and listen for a bad muffler. If it is rusted and cracked warn customer about carbon monoxide fumes and sell installation of a new muffler and tail pipe.



**Direct Mail Advertising**—Ads featuring "Spring Carnival Specials" have proved successful. They can be in color and contain separate service specials. Offering something for free attracts the curious, who usually buy once they're in.

#### **\$7.50 FOR MERCHANDISING IDEAS**

If you have a merchandising idea or a sales promotion technique that has proved successful, send it along to **MOTOR AGE**. If idea is accepted and used, \$7.50 will be paid for the idea.

**Fan Belt Promotion**—Have all attendants wear fan belts around their necks. When a curious customer asks about them, then ask permission to check his car's fan belt for worn or cracked conditions. This sales technique has sold many fan belts.



# Design and service of the modern THERMOSTAT

*Malfunctioning thermostats are one of the major causes of overheating in cars*

**O**NE thermostat, smaller than a tennis ball, does a vital job in the modern automobile. By controlling the flow of coolant to the radiator, this heat-sensitive device keeps engine temperature within desired limits. The result is quicker warm-up, smoother performance, better fuel economy, and less engine maintenance.

The modern thermostat, introduced about 1924, replaced the radiator "blind" or "shutter" widely used on cars of earlier days. The stat regulates engine coolant temperature with considerably greater precision and without the need for owner attention unless malfunction is indicated.

The principle of operation of the stat is well known. When the engine is cold, the stat is closed and engine coolant by-passes the radiator. As coolant approaches the desired temperature, the stat begins to open, permitting coolant to flow to the radiator. Continual opening and closing of the stat valve automatically regulates coolant flow to the radiator, keeping the engine at the proper temperature.

Almost all cars sold today have heaters that utilize the heat from engine coolant. Satisfactory heater performance would not be possible, automatically, without a thermostat.

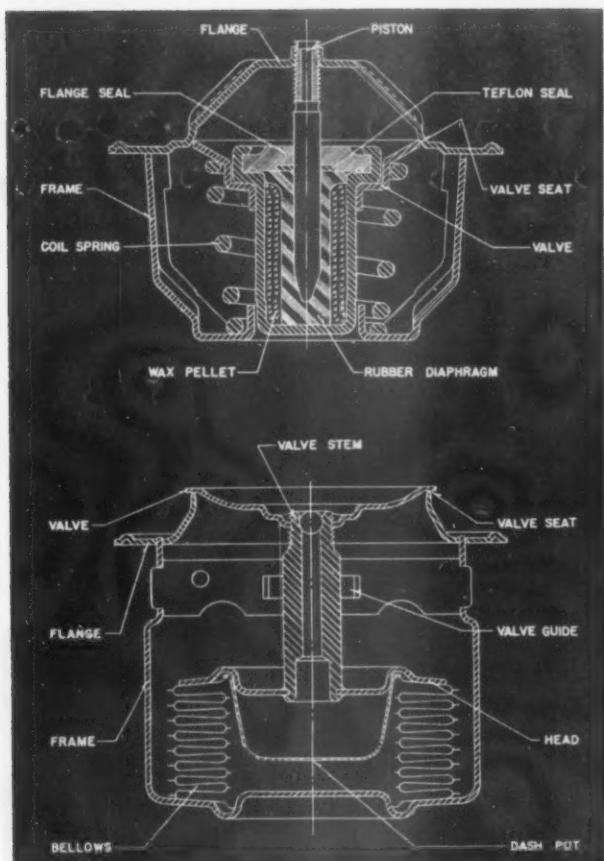


**BY JACK MONTGOMERY**  
Technical Editor

Stats usually can be identified as to design by two words. The first refers to the valve through which coolant flows, such as "poppet." The second word refers to the power element such as "pellet."

The two most common types of stat are shown in illustrations and are the poppet bellows and poppet pellet types.

Whether the power element of a stat is wax in a pellet or volatile liquid in a bellows, it expands when heated and contracts when cooled. By connecting the power element through a piston or stem to a valve, the expansion of the power element opens the valve to permit coolant to flow to the radiator. Likewise, contraction of the power element closes the valve to restrict or stop coolant flow from the engine to the radiator.



◀ Top: Cross section of the poppet pellet thermostat. Below it is a cross-section of a poppet-bellows stat.



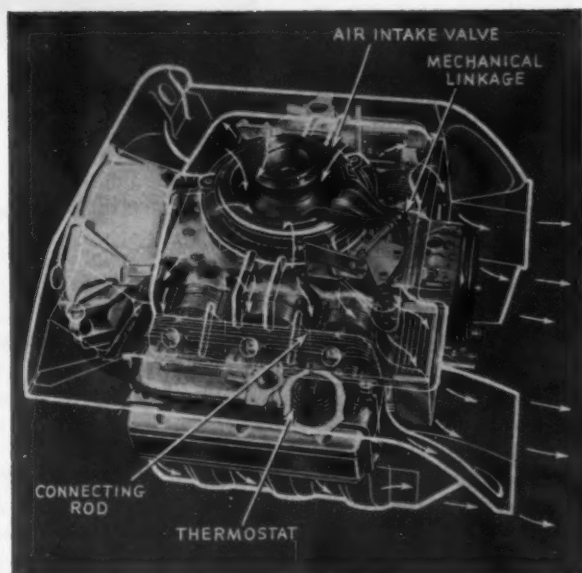
Corvair bellows thermostat being removed from under left hand bank exhaust manifold.

Corvair bellows thermostat in air exhaust duct regulates engine temperature by opening and closing ring-shaped air valve.

Catalogs list the proper thermostats to be used on most U.S. and foreign cars. Several stats may be listed as satisfactory for use in a particular car. Your choice should be based on the temperature at which the car will be operating, the desired heater performance and the type of anti-freeze used. Guides to follow are:

1. Never use a bellows stat rated higher than 150 degrees F. or a pellet stat higher than 160 degrees F. with alcohol base anti-freeze, since excessive overflow loss will occur.
2. Never use a bellows thermostat

*Continued on page 101*



## IGOA national convention in ATLANTA, July 7-9



*Garage men from all parts of the country expected to be on hand for 5th conclave*

Chairman and co-chairman of the various committees for the 5th Annual IGOA Convention at a pre-convention meeting last month. Seated, 5th from left is Harry Wright, president of IGO of Atlanta. Seated 7th from left is H. F. "Red" Reagin, president of IGOA.



**"L**OOKS like we'd better tell the hotel to give us some bigger meeting rooms."

That's what Harry R. Wright told "Red" Reagin recently as he scanned the advance registrations for the fifth annual convention of the Independent Garage Owners of America. Convention will be held at the Dinkler Plaza Hotel in Atlanta, Ga., July 7-9.

Harry's president of the IGO of Greater Atlanta. He has been saddled with a lot of the work of putting together the details of this convention. "Red" is H. F. Reagin, the Atlanta garageman elevated to the presidency of IGOA last June in Denver.

There's plenty of indication that this meeting will chalk up the biggest attendance. (The first convention was held at Wichita, Kan., in 1956).

The program itself (note the details on the next page) has been designed to place garagemen themselves on the platform.

Wholesalers and manufacturers' representatives, too, are going to be on the hand to a far greater degree than in the past.

### Items of General Interest

All in all, it promises to be a jam-packed convention of items and programs of interest to garagemen the country over.



## FIFTH ANNUAL IGOA CONVENTION

### Wednesday, July 6—

- 8:00 a.m. to 5:00 p.m.—Meeting of Regional Directors and State Managers (Mahogany Room), open to IGOA members only.
- 2:00 p.m. to 9:00 p.m.—Registration in lobby of Dinkler Plaza Hotel.
- 7:00 p.m.—Meeting of Advisory Council (Mahogany Room).
- 7:00 p.m.—Meeting of Executive Committee (Forsyth Room).
- 8:00 p.m.—Joint meeting of Advisory Council and Executive Committee. (Mahogany Room).

### Thursday, July 7—

- 8:00 a.m. to 4:00 p.m.—Registration continues in lobby of the Dinkler Plaza Hotel.
- 8:30 a.m. to 11:20 a.m.—General board meeting (Dinkler Room A) President Reagin presiding. (Open to all conventioners, but participation only by official delegates except where permission to speak is extended through usual procedure). (Delegates reports and other official matters are taken up at this and the subsequent director's sessions).
- 11:30 a.m.—Men, ladies and children leave the Dinkler Plaza Hotel by bus for Grant Park.
- 12:30 p.m.—Men tour world-famous Cyclorama.
- 1:00 p.m.—Genuine Southern Style barbecue.
- 1:30 p.m. to 2:30 p.m.—Ladies and children tour Cyclorama.
- 1:30 p.m. to 3:15 p.m.—Ladies and children tour Zoo.
- 2:30 p.m. to 6:00 p.m.—General board meeting, (Dinkler Room A) including election of officers and selection of 1961 convention city.
- 6:30 p.m. to 7:30 p.m.—Cocktail party at Dinkler Plaza (Roof), sponsored by Automotive Affiliated Representatives, Automotive Booster Club B-6, Georgia Automotive Wholesalers Association and IGOA of Greater Atlanta.
- 8:30 p.m. to ? Committee meetings.

### Friday, July 8—

- 8:00 a.m. to 4:00 p.m.—Registration continues in lobby of the Dinkler Plaza Hotel.
- 8:30 a.m. to 11:20 a.m.—Board and Committee meetings. (Dinkler Room A).
- 11:30 a.m.—Men leave by bus for tour of John Rogers Company.
- 12:30 p.m.—Luncheon and tour of Yohannon's modern kitchen (Ladies and children).
- 12:30 p.m.—Men have lunch at John Rogers Co.
- 2:15 p.m.—Men leave by bus for Dinkler Plaza.
- 3:00 p.m.—Ladies and children return to hotel.
- 2:30 p.m. to 6:00 p.m.—Board and Committee meetings (Dinkler Room A).

### Saturday, July 9—

- 8:00 a.m. to 4:00 p.m.—Registration continues in the lobby of Dinkler Plaza Hotel.
- 9:00 a.m.—First general convention session. (Roof) Harry R. Wright, president of the IGOA of Greater Atlanta, presiding.

Invocation by W. C. Wilder, Nashville, Tenn., third vice president, IGOA.

Welcome to Georgia! by Howard Viar of Savannah, president of the IGOA of Ga.

Welcome South, Brother! by W. R. "Tommy" Thompson of Miami, president of the IGOA of Florida

We're Glad We Came! by W. R. "Bill" McNaughton, Minneapolis, Minnesota.

9:20 a.m.—Introduction of Special Guests by President Reagin.

9:30 a.m.—Address, "How the IGOA of North Carolina Came into Being with 300 Members in 22 Units in Less than a year," by Bryan G. Davis of Raleigh, president, IGOA of North Carolina.

9:55 a.m.—Address, "Why Is There A Shortage of Mechanics," by Henry Sorenson of Long Beach, past president, IGOA of California.

10:20 a.m.—Introduction of Guest Speaker by Lewis Allison of Greenville, president of IGOA of South Carolina.

Bernard M. Suttler, Inspector, Federal Bureau of Investigation, United States Department of Justice.

11:00 a.m.—"IGOA Signs of Progress," by Henry S. Clark, Unit Service Exchange Co., Atlanta, and past president of Automotive Booster Clubs International.

Noon—Time out for lunch. (You're on your own.)

2:00 p.m.—Second general convention session. (Roof) Harry R. Wright, president of IGOA Greater Atlanta, presiding. Announcement of details of Saturday evening program.

2:05 p.m.—Introduction of Guest Speaker by John Rogers, president of John Rogers Co.

Address, "The Road Ahead for Garagemen," by Ira Saks of Cleveland, Ohio, Executive Director, Ignition Manufacturers.

2:50 p.m.—Panel Discussion, "Problems of Garagemen and the Answers As We See Them."

Participants: Bert Cook of Dallas, Texas, first president of IGOA.

Howard Eves of Pasadena, California, past president of IGOA.

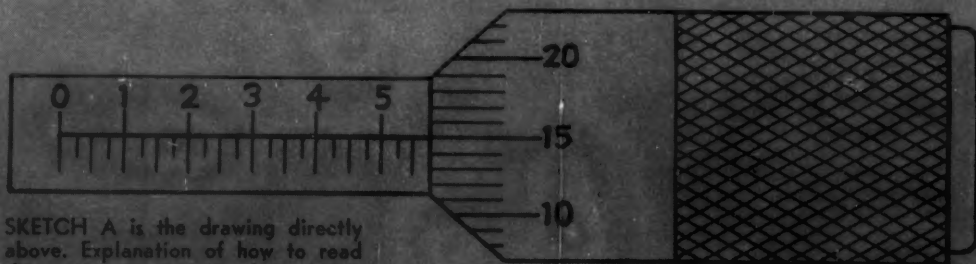
Ray J. Campbell of Denver, Colorado, immediate past president of IGOA.

Art Fox of Cedar Rapids, president of IGOA of Iowa.

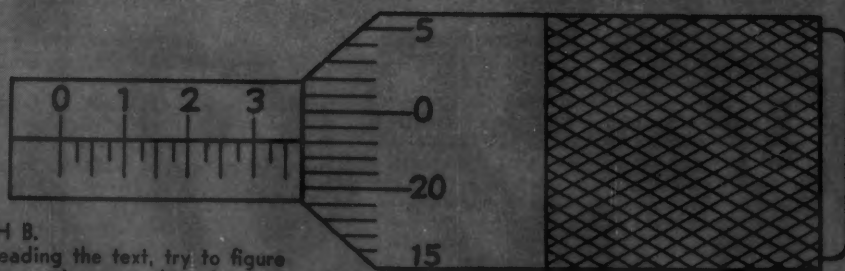
Moderator: Harold Grindle of Toledo, Executive Director of IGOA of Ohio. (Questions will be invited from the audience.)

4:35 p.m. to 5:00 p.m.—Recap of panel's remarks and some pertinent comments of his own by Mel Turner, veteran Chicago garage operator and Curriculum Director, Automotive Service Industry Association.

7:45 p.m.—Annual banquet, Dinkler Plaza Hotel. (Roof) Harry Wright, president of IGOA of Greater Atlanta, master of ceremonies.



SKETCH A is the drawing directly above. Explanation of how to read this setting is given in the article's text. (This setting is .565)



SKETCH B.  
After reading the text, try to figure out the setting on this drawing. (Answer is given on page 110.)



Mr. John Glass (right) demonstrates skill with micrometer to interested observer. Mr. Glass acquired his skill while an apprentice in the early days of the Locomobile.

## How to READ a MICROMETER

*A micrometer is a precision instrument and should receive special care and protection*



Picture shows use of an inside micrometer in checking concentricity of connecting rod big end bore.



In using regular micrometer, support 'mike' in one hand. Turn thimble with index finger.

**H**AVE you ever watched an oldtimer grasp a micrometer? He picks it up carefully, wipes off the anvil and spindle—then applies it to a part. In a moment he gets his reading.

Training and practice is the answer. To understand the micrometer it is well to learn the names of its various parts.

#### Precision Tool

A micrometer is first and always a precision measuring instrument. It should never be handled roughly. Keep a micrometer lightly oiled or coated with a thin film of petroleum jelly. Keep the "mike" in its own special container or in a felt-covered drawer of your tool chest.

Here is a rundown of the main parts of a

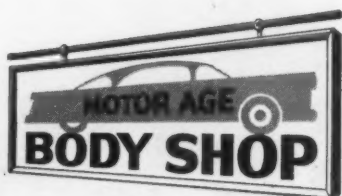
"mike". (A referral to the illustrating photo should also be of help.)

The frame is the main support or body of the "mike". The spindle is attached to the back end of the thimble on the inside. Thus the spindle turns when the thimble is rotated. The spindle is threaded into the frame so that rotating the thimble moves the spindle in or out. This changes the distance between the spindle and the anvil. Calibration lines are located both on the thimble and on sleeve.

The pitch of the threads on the spindle and the frame are 40 to the inch. One full turn of the thimble will move the spindle and thimble longitudinally  $\frac{1}{40}$ th of an inch or .025 thousandths of an inch.

The stationary sleeve has vertical calibra-

*Continued on page 84*



## TRUCK PAINTING builds profits

*Successful body shop points to rule that "no paint job will be better than the materials used"*



Appearance reconditioning profits are gathered from all types of vehicles large and small.

**I**F it's got a surface of any kind, we can paint it." This is the motto of George (air-brush) Abernethy, owner and operator of State Road Motors, Media, Pa. George's shop is exclusively a body and paint operation. Or as some of his customers say "He's an appearance reconditioning specialist."

The shop is completely equipped with the latest type of paint, body, front-end and frame equipment. His clean and well-equipped shop is staffed by a force of skilled craftsmen. Skilled mechanics and painters handle a wide variety of body and paint operations each day. The combination of skill and exceptionally high standards of craftsmanship are apparent in the steady flow of customers.

One thing that George stresses in talking to his customers: "The job will be no better than the materials used." With over thirty years of experience in automotive painting, he has learned to never take chances on low



The finest quality paints, thinners and materials are always used to assure customer satisfaction.



All surfaces are thoroughly cleaned and properly prepared before final finishing coat is applied.

quality paints and thinners.

Only the finest paints available are used. Always the best and most compatible thinners are purchased.

George will tackle any paint job. He has built up a following in the imported car field; does a big business with many imported car dealers and owners from as much as 60 miles away.

Restoring and refinishing of antique automobiles is another source of income for State Road Motors. They have even contracted to refinish four-drawer office filing cabinets for a large office building.



Commercial masking paper and tape are drawn from taper dispenser and applied as shown.

Recently George contracted to do body repairs and completely refinish a tractor trailer. The trailer, a moving van, was paneled in aluminum. Several panels were torn and dented and the rub-rail was severely damaged. The torn panels were replaced and dented one's straightened. The rub-rail was completely replaced.

Johnnie, the master painter and his assistants, were soon at work preparing the trailer for painting. The clean-up and preparation of all metal is of the utmost importance in the painting operation. John's experience has convinced him that poor adhesion of materials can in most cases be traced to moisture or grease left on the surface to be painted.

To start off with, the trailer was thoroughly steamed-cleaned to rid it's surfaces of all road dirt and tar. Then it was cleaned with a good quality wax and tar remover. John and his crew then set about, sanding all the surfaces. Both hand and power sanding

*Continued on page 110*

# WHAT to look for when you run into TROUBLE

## The Problem . . . . .

### Battery runs down

*Check  
for:*

- a. Circuit resistance
- b. Low generator output
- c. Driver's driving habits
- d. Short circuits

### Battery does not retain water

*Check  
for:*

- a. Faulty voltage regulator
- b. Broken battery case

### Starter relay does not close

*Check  
for:*

- a. Loose connections
- b. Open circuit between starter relay arm (or ground) terminal post and neutral switch
- c. Faulty neutral switch
- d. Defective starter relay
- e. Faulty ignition-starter switch
- f. Battery run down

### Relay operates but solenoid does not

*Check  
for:*

- a. Open circuit wire between starter-relay solenoid terminal and solenoid actuating terminal post
- b. Solenoid switch contacts dirty
- c. Turn and under cut armature
- d. Worn bushes
- e. Broken leads
- f. Loose terminal connections on terminal bus bar between solenoid and starter fields
- g. Loose soldered connection inside solenoid switch cover

### Solenoid plunger vibrates back & forth when switch is engaged

*Check  
for:*

- a. Battery run down
  - b. Loose cable connections
  - c. Loose connections at relay, ignition starter switch or solenoid
  - f. Faulty solenoid
- Broken leads or soldered connections inside solenoid switch cover

### Solenoid operates but starter does not

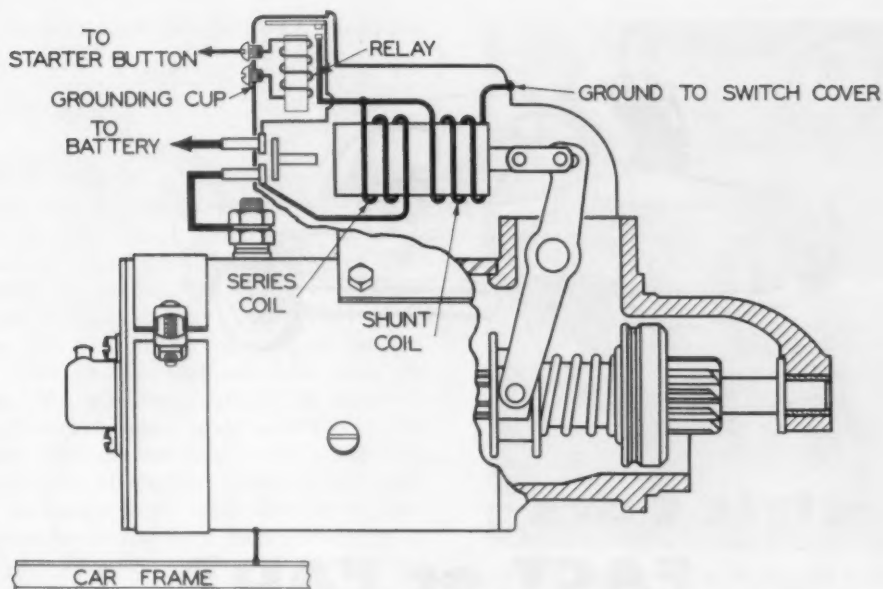
*Check  
for:*

- a. Battery should be recharged
- b. Loose cable connections
- c. Pinion clearance out of adj.

### Starter fails and lights dim

*Check  
for:*

- a. Discharged battery
- b. Loose connections
- c. Grounded brush pigtails and coil leads
- d. Grounded starter fields
- e. Armature rubbing on field poles



#### **Starter armature rotates but pinion does not engage**

*Check  
for:*

- a. Faulty starter drive and adjust pinion clearance
- b. Missing flywheel ring gear teeth

#### **Starter pinion jams in ring gear**

*Check  
for:*

- a. Defective drive
- b. Missing flywheel ring gear teeth
- c. Loose starter mounting bolts
- d. Armature shaft bent

#### **Generator fails to charge**

*Check  
for:*

- a. Open circuit in field lead from generator to regulator
- b. Grounded armature lead from generator to regulator

#### **Low unsteady charging rate**

*Check  
for:*

- a. Loose drive belt
- b. Loose connections
- c. Worn generator brushes
- d. Defective ammeter

#### **Noisy generator**

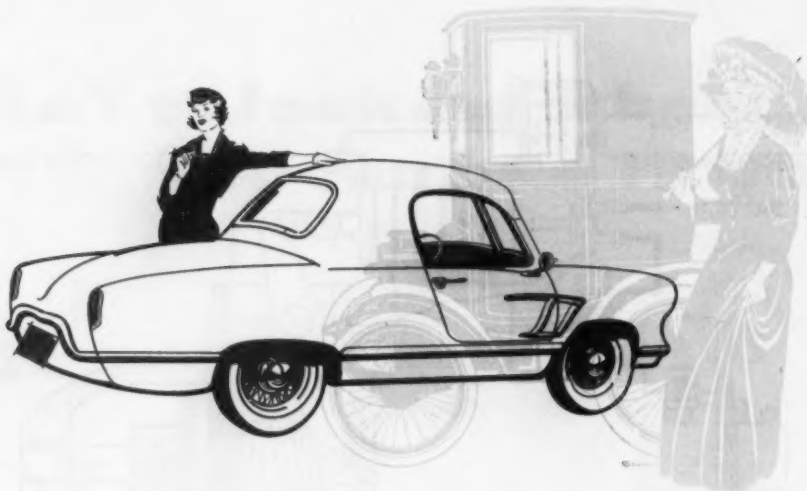
*Check  
for:*

- a. Misaligned pulley
- b. Worn bearing
- c. Loose pole shoe screws

#### **Excessive charging rate**

*Check  
for:*

- a. Sticking regulator contacts
- b. High reading of voltage regulator
- c. Grounded field lead between generator and regulator
- d. Grounded field terminal



## Electric Cars— FACT or FAD?

*Many quarters indicate a demand for these vehicles; experts differ over short or long haul feasibility*

**E**XPERIMENTAL electric cars and trucks are being built in the United States, Britain and other countries for what many experts predict will be a revival of the battery-powered vehicle for short hauls. Whether there will be a strong consumer demand for a practical electric car remains to be seen, however. It may not be too long before two different electric cars may be seen on America's highways. The Henney Kilowatt is being produced by the Henney Motor Company of Canastota, N.Y. The other

Henney Kilowatt can be fully recharged overnight by plugging into any 110 or 220-volt outlet.





By WILLIAM M. MONTGOMERY, News Editor

electric car is in the planning stage for sometime this year. It will be built by the Nu-Way Industries, Inc., Lansing, Michigan.

What will these new electric cars be like? Will they be similar to the first battery-powered car built in 1892? The heyday of the electric car was before the turn of the century. Then gasoline-powered cars took the lead in 1901. Electrics made by 36 manufacturers, however, sold briskly until World War I. After 1923 the electrics faded away with the exception of electric trucks which were being marketed until 1933. During the last few years there has been strong attempts to bring the electrics back on the American scene. Here are some interesting details on what they will be like.

The Henney Kilowatt, an electric automobile, engineered by Eureka Williams Corporation for its Henney Motor Company division was unveiled and demonstrated recently. In appearance it is a complete departure from the battery-powered horseless carriage that was so popular around the turn of the century. It utilizes the small-car body design of the four-door Renault Dauphine with the rear seat removed to make room for the control.

The Kilowatt is a brain child of B. L. England, chairman of the board of the Atlantic City Electric Company, and C. Russell Feldmann, chairman of the board and president of the Eureka Williams Corporation, of which the Henney Motor Company is a division.

A study had been made recently of the practicality of using the electric car for short hauls in the utility industry. The report estimated that the 258 electric utilities could use 10,000 or more small battery-powered cars in urban areas for its meter readers, collectors, salesmen and service personnel. The renaissance of the electric car for urban use would also provide an important outlet for current for recharging in the hours when the load is low. That is one reason why the utility industry is tremendously interested in the comeback of the electric passenger car and truck.



Kilowatt is powered by 36 two-volt batteries with 18 under the front hood and 18 in the rear trunk.

A new feature of the Kilowatt is the control, or controller, a new stepless type. The control varies the voltage that goes to the traction-type motor and it varies the speed of the car. To operate the car the driver pushes a switch on the dashboard into position for forward or reverse. Then he presses his foot on the accelerator, a standard gasoline type which operates the control. This varies the

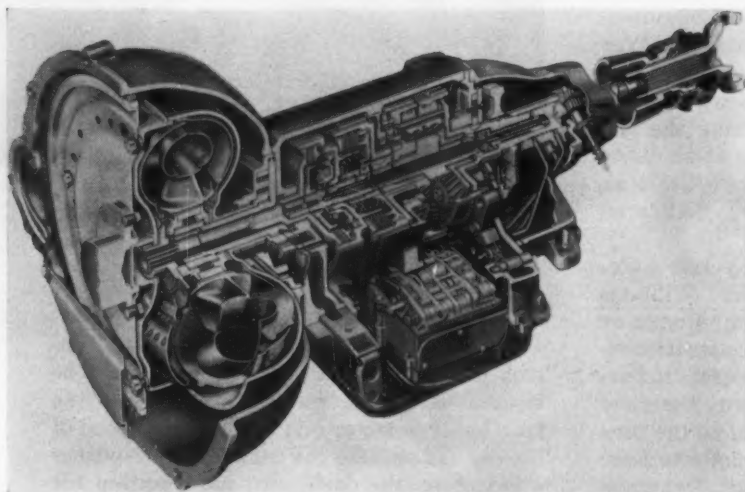
*Continued on page 78*

Electric car built by Nu-Way Industries, Inc. has an all fibre-glass body and six 12-volt batteries.



## MOTOR AGE CLINIC for troubleshooting

BY JACK MONTGOMERY, TECHNICAL EDITOR



Above: Cut-away view of Ford automatic transmission

### 1958 Ford Stalls When Driven Slowly

We have a customer who has a 1958 Fairlane 500, which frequently stalls at every traffic light and when he slows down for a turn at a corner. This usually happens after he has driven 60 miles or so. This car did backfire when starting, forcing the butterfly out of the opening just below the air cleaner. When this was forced back down the motor would start okay. We blocked this so it cannot now get out of this opening. While it does backfire once in a while now it can be started without adjusting butterfly. We have been unable to locate cause of the backfire and cannot determine whether there

is any connection between this and the stalling. The owner says that when it stalls it feels like the automatic drive does not go into neutral when the accelerator is released.

Feldman's Garage,  
West Salem, Ill.

SINCE the owner says it feels like the automatic transmission stays in drive when coming to a stop; the trouble is probably due to a stuck governor valve or piston. I would suggest draining this transmission and refilling it with new fluid. The backfiring could be caused by the accelerator pump being out of adjustment or maybe some water in the gas.

### Pontiac Has Annoying Vibration At 57 to 60 MPH

I have a car which is a 1960 Pontiac Bonneville Vista. It has 5,000 miles on it. From the very first it has had a bad vibration between 57 and 60 mph, but only on the freeway. It does not seem to do it on an asphalt paving. You can feel it in the steering wheel and also on the throttle foot pedal. The Pontiac dealer has balanced all four wheels, tightened the top bolts on front shocks, checked all shocks for possible defective one, loosened all body bolts to raise body from frame and let it settle and checked alignment of drive shaft. Nothing seems to do one bit of good. I was going to install a new set of adjustable shocks but thought I would ask you first.

Ted Milliken  
Santa Clara, Calif.

FIRST of all I would test the engine to make sure whether or not the car has to be moving to vibrate. Speeding the engine up slowly should determine this for you. If you do find it under this condition, the trouble could be from an unbalanced flywheel, fan blade or a faulty generator bearing. Since the wheels have been checked for balance and all the other common things, I would advise changing the shocks.

# CURRENT PASSENGER CAR PRICE, WEIGHT AND BODY TABLE

Following are prices at factory for cars with standard equipment as of May 23, 1960, State or local taxes, transportation and finance charges and optional equipment are extra.

| BODY MAKE AND MODEL  | AMERICAN MOTOR CORP.                        |                                    |  |                 | BODY MAKE AND MODEL  | CHRYSLER CORP. cont'd                       |                                    |  |                 | BODY MAKE AND MODEL | FORD MOTOR CO. cont'd                       |                                    |  |                 | BODY MAKE AND MODEL | GENERAL MOTORS, cont'd                      |                                    |  |                 |  |  |  |  |  |
|----------------------|---|------------------------------------|--|-----------------|----------------------|---|------------------------------------|--|-----------------|---------------------|---|------------------------------------|--|-----------------|---------------------|---|------------------------------------|--|-----------------|--|--|--|--|--|
|                      | List Price at Factory without Federal Taxes | Federal Taxes and Handling Charges | Suggested Price at Factory including Federal Taxes | Shipping Weight |                      | List Price at Factory without Federal Taxes | Federal Taxes and Handling Charges | Suggested Price at Factory including Federal Taxes | Shipping Weight |                     | List Price at Factory without Federal Taxes | Federal Taxes and Handling Charges | Suggested Price at Factory including Federal Taxes | Shipping Weight |                     | List Price at Factory without Federal Taxes | Federal Taxes and Handling Charges | Suggested Price at Factory including Federal Taxes | Shipping Weight |  |  |  |  |  |
| AMERICAN MOTOR CORP. |   |                                    |  |                 |                      |   |                                    |  |                 |                     |   |                                    |  |                 |                     |   |                                    |  |                 |  |  |  |  |  |
| RAMBLER              |   |                                    |  |                 |                      |   |                                    |  |                 |                     |   |                                    |  |                 |                     |   |                                    |  |                 |  |  |  |  |  |
| American-6           |   |                                    |  |                 | DODGE DART, cont'd   |   |                                    |  |                 |                     |   |                                    |  |                 |                     |   |                                    |  |                 |  |  |  |  |  |
| DeLuxe               |   |                                    |  |                 | Hardtop, 2d.....     | 2503  | 234                                | 2737   | 3605            | Sunliner.....       | 2717  | 256                                | 2973   | 3841            | Bel Air-V8          | 2270  | 221                                | 2901   | 3505            |  |  |  |  |  |
| Sedan, 2d.....       | 1638  | 157                                | 1795   | 2469            | Hardtop, 4d.....     | 2558  | 238                                | 2796   | 3655            | Sta. Wag.-V8        | 2482  | 237                                | 2699   | 3931            | Sedan, 2d.....      | 2320  | 225                                | 2545   | 3575            |  |  |  |  |  |
| Sedan, 4d.....       | 1683  | 161                                | 1844   | 2494            | Convertible.....     | 2736  | 232                                | 2968   | 3690            | Tudor Ranch.....    | 2527  | 242                                | 2769   | 4048            | Sedan, 4d.....      | 2388  | 228                                | 2596   | 3630            |  |  |  |  |  |
| Sta. Wagon, 2d.....  | 1647  | 173                                | 1920   | 2539            | DODGE                |   |                                    |  |                 | Fordor Ranch.....   | 2616  | 249                                | 2865   | 4082            | Hardtop, 4d.....    | 2428  | 233                                | 2661   | 3620            |  |  |  |  |  |
| Super-6              |   |                                    |  |                 | Matador V-8          |   |                                    |  |                 | Ctry. Sed., 4d, 6p  | 2616  | 249                                | 2865   | 4082            | Sta. Wag., 4d, 6p   | 2407  | 243                                | 2681   | 3820            |  |  |  |  |  |
| Sedan, 2d.....       | 1717  | 163                                | 1880   | 2496            | Sedan, 4d.....       | 2672  | 250                                | 2930   | 3725            | Ctry. Squire, 6p.   | 2696  | 254                                | 2950   | 4108            | Sta. Wag., 4d, 6p   | 2428  | 247                                | 2681   | 3820            |  |  |  |  |  |
| Sedan, 4d.....       | 1762  | 167                                | 1929   | 2521            | Hardtop, 2d.....     | 2734  | 262                                | 2996   | 3750            | THUNDERBIRD         |   |                                    |  |                 | Sta. Wag., 4d, 6p   | 2703  | 254                                | 2957   | 4000            |  |  |  |  |  |
| Sta. Wagon, 2d.....  | 1926  | 179                                | 2105   | 2566            | Hardtop, 4d.....     | 2807  | 268                                | 3075   | 3820            | Hardtop.....        | 3428  | 329                                | 3755   | 3799            | Impala              |   |                                    |  |                 |  |  |  |  |  |
| Custom-6             |   |                                    |  |                 | Sta. Wagon, 6p.      | 2960  | 279                                | 3239   | 4045            | Convertible.....    | 3960  | 362                                | 4222   | 3987            | Sedan, 4d.....      | 2562  | 235                                | 2887   | 3580            |  |  |  |  |  |
| Sedan, 2d.....       | 1717  | 163                                | 1880   | 2496            | Sta. Wagon, 9p.      | 3067  | 287                                | 3354   | 4120            | LINCOLN             |   |                                    |  |                 | Hardtop, 2d.....    | 2468  | 236                                | 2704   | 3640            |  |  |  |  |  |
| Sedan, 4d.....       | 1762  | 167                                | 1929   | 2521            | Polaris-V8           |   |                                    |  |                 | Lincoln             |   |                                    |  |                 | Hardtop, 4d.....    | 2528  | 241                                | 2769   | 3630            |  |  |  |  |  |
| Sta. Wagon, 2d.....  | 1926  | 179                                | 2105   | 2566            | Sedan, 4d.....       | 2672  | 250                                | 2930   | 3725            | Hardtop, 2d.....    | 4807  | 446                                | 5253   | 4917            | Convertible.....    | 2700  | 254                                | 2954   | 3635            |  |  |  |  |  |
| Custom-6             |   |                                    |  |                 | Hardtop, 2d.....     | 2734  | 262                                | 2996   | 3750            | Sedan, 4d.....      | 4852  | 459                                | 5441   | 5012            | Sta. Wag., 4d, 6p   | 2739  | 257                                | 2996   | 3960            |  |  |  |  |  |
| Sedan, 2d.....       | 1717  | 163                                | 1880   | 2496            | Hardtop, 4d.....     | 2807  | 268                                | 3075   | 3820            | Hardtop, 2d.....    | 4807  | 446                                | 5253   | 4917            | CORVAIR             |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 1762  | 167                                | 1929   | 2521            | Sta. Wagon, 6p.      | 2960  | 279                                | 3239   | 4045            | Hardtop, 4d.....    | 4852  | 459                                | 5441   | 5012            | 500 Series          |   |                                    |  |                 |  |  |  |  |  |
| Sta. Wagon, 2d.....  | 1926  | 179                                | 2105   | 2566            | Sta. Wagon, 9p.      | 3067  | 287                                | 3354   | 4120            | Premiere            |   |                                    |  |                 | Coupe, 5p.....      | 1810  | 174                                | 1904   | 2305            |  |  |  |  |  |
| Rambler-6            |   |                                    |  |                 | Sedan, 4d.....       | 2672  | 250                                | 2930   | 3725            | Hardtop, 2d.....    | 5221  | 477                                | 5696   | 4965            | Sedan, 4d.....      | 1860  | 178                                | 2038   | 2315            |  |  |  |  |  |
| DeLuxe               |   |                                    |  |                 | Hardtop, 2d.....     | 2734  | 262                                | 2996   | 3750            | Sedan, 4d.....      | 5451  | 494                                | 5945   | 4965            | 700 Series          |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 1918  | 180                                | 2096   | 2818            | Convertible.....     | 2993  | 282                                | 3275   | 3815            | Hardtop, 4d.....    | 5451  | 494                                | 5945   | 5060            | Coupe.....          | 1870  | 179                                | 2049   | ....            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Sta. Wagon, 6p.      | 3125  | 291                                | 3416   | 3765            | Continental         |   |                                    |  |                 | Sedan, 4d.....      | 1920  | 183                                | 2193   | ....            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Sta. Wagon, 9p.      | 3208  | 296                                | 3506   | 4085            | Hardtop, 2d.....    | 6037  | 561                                | 6586   | 5044            | Corvette            |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Limousine.....       | 3315  | 306                                | 3621   | 4220            | Hardtop, 2d.....    | 6037  | 561                                | 6586   | 5044            | Sportscar.....      | 3563  | 309                                | 3872   | 2840            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | IMPERIAL             |   |                                    |  |                 | Sedan, 4d.....      | 6267  | 578                                | 6945   | 5143            | OLDSMOBILE          |   |                                    |  |                 |  |  |  |  |  |
| Super                |   |                                    |  |                 | Custom               |   |                                    |  |                 | Hardtop, 4d.....    | 6267  | 578                                | 6945   | 5143            | Series 88           |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Southampton, 2d..... | 4481  | 352                                | 4833   | 4655            | Convertible.....    | 6482  | 594                                | 7056   | 5180            | Sedan, 2d.....      | 2574  | 261                                | 2835   | 4046            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Southampton, 4d..... | 4580  | 359                                | 4939   | 4670            | Town Car            |   |                                    |  |                 | Celeb. Sedan.....   | 2834  | 266                                | 2900   | 4106            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Crown                |   |                                    |  |                 | Limousine.....      | 9388  | 844                                | 10230  | 5461            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Southampton, 2d..... | 4481  | 352                                | 4833   | 4655            | MERCURY             |   |                                    |  |                 | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Sedan, 4d.....       | 4580  | 359                                | 4939   | 4670            | Monteerie           |   |                                    |  |                 | Convertible.....    | 2991  | 293                                | 3294   | 4101            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Hardtop, 2d.....     | 4682  | 365                                | 5313   | 4720            | Sedan, 2d.....      | 2389  | 242                                | 2631   | 3952            | Fiesta, 2s.....     | 3065  | 296                                | 3363   | 4447            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Sedan, 4d.....       | 4720  | 365                                | 5313   | 4720            | Sedan, 4d.....      | 2482  | 246                                | 2730   | 4029            | Fiesta, 3s.....     | 3165  | 306                                | 3471   | 4471            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Southampton, 4d..... | 4720  | 365                                | 5313   | 4720            | Hardtop, 2d.....    | 2530  | 251                                | 2781   | 3964            | Super 88            |   |                                    |  |                 |  |  |  |  |  |
| Super                |   |                                    |  |                 | Convertible.....     | 5273  | 411                                | 5684   | 4820            | Convertible.....    | 2588  | 257                                | 2845   | 4061            | Celeb. Sedan.....   | 2834  | 265                                | 2900   | 4106            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Le Baron             |   |                                    |  |                 | Colony Park, 4d.    | 3510  | 327                                | 3837   | 4568            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Southampton, 4d..... | 4720  | 365                                | 5313   | 4720            | BUICK               |   |                                    |  |                 | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Limousine.....       | 5273  | 411                                | 5684   | 4820            | La Sabre            |   |                                    |  |                 | Convertible.....    | 2951  | 293                                | 3284   | 4101            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | PLYMOUTH††           |   |                                    |  |                 | Sedan, 2d.....      | 2500  | 256                                | 2756   | 4139            | Fiesta, 2s.....     | 3065  | 296                                | 3363   | 4447            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Savoy-V8             |   |                                    |  |                 | Sedan, 4d.....      | 2606  | 264                                | 2870   | 4219            | Fiesta, 3s.....     | 3165  | 306                                | 3471   | 4471            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Sedan, 2d.....       | 2170  | 174                                | 2344   | 3490            | Hardtop, 2d.....    | 2647  | 268                                | 2913   | 4163            | Series 88           |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | DeLuxe, 4d.....      | 2217  | 178                                | 2395   | 3500            | Hardtop, 4d.....    | 2718  | 273                                | 2991   | 4268            | Celeb. Sedan.....   | 2834  | 265                                | 2900   | 4106            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Belvedere-V8         |   |                                    |  |                 | Convertible.....    | 2832  | 283                                | 3148   | 4233            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Sedan, 2d.....       | 2290  | 183                                | 2473   | 3505            | St. Wagon           |   |                                    |  |                 | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Sedan, 4d.....       | 2337  | 187                                | 2524   | 3520            | Invicta             |   |                                    |  |                 | Convertible.....    | 2951  | 293                                | 3284   | 4101            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Hardtop, 4d.....     | 2357  | 188                                | 2545   | 3505            | Sedan, 2d.....      | 3045  | 312                                | 3357   | 4324            | Fiesta, 2s.....     | 3065  | 296                                | 3363   | 4447            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Fury-V8              |   |                                    |  |                 | Hardtop, 2d.....    | 3129  | 318                                | 3447   | 4285            | Fiesta, 3s.....     | 3165  | 306                                | 3471   | 4471            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Hardtop, 4d.....     | 2463  | 196                                | 2659   | 3550            | Hardtop, 4d.....    | 3182  | 323                                | 3515   | 4365            | Series 88           |   |                                    |  |                 |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Hardtop, 2d.....     | 2485  | 196                                | 2680   | 3550            | Convertible.....    | 3290  | 330                                | 3620   | 4347            | Celeb. Sedan.....   | 2834  | 265                                | 2900   | 4106            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Hardtop, 4d.....     | 2538  | 202                                | 2740   | 3610            | Est. Wagon, 2s.     | 3098  | 300                                | 3368   | 4578            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Convertible.....     | 2717  | 215                                | 2932   | 3630            | Est. Wagon, 3s.     | 3186  | 307                                | 3483   | 4564            | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Suburban-V8          |   |                                    |  |                 | Invicta             |   |                                    |  |                 | Convertible.....    | 2951  | 293                                | 3284   | 4101            |  |  |  |  |  |
| Super                |   |                                    |  |                 | DeLuxe, 2d, 6p.      | 2488  | 198                                | 2686   | 3870            | Sedan, 4d.....      | 3045  | 312                                | 3357   | 4324            | Fiesta, 2s.....     | 3065  | 296                                | 3363   | 4447            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | DeLuxe, 4d, 6p.      | 2550  | 203                                | 2753   | 3990            | Hardtop, 2d.....    | 3129  | 318                                | 3447   | 4285            | Fiesta, 3s.....     | 3165  | 306                                | 3471   | 4471            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Custom, 4d, 6p.      | 2635  | 209                                | 2845   | 3990            | Hardtop, 4d.....    | 3182  | 323                                | 3515   | 4365            | Series 88           |   |                                    |  |                 |  |  |  |  |  |
| Super                |   |                                    |  |                 | Custom, 4d, 6p.      | 2738  | 217                                | 2955   | 4090            | Convertible.....    | 3290  | 330                                | 3620   | 4347            | Celeb. Sedan.....   | 2834  | 265                                | 2900   | 4106            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Sport, 4d, 6p.       | 2770  | 219                                | 2989   | 3895            | Est. Wagon, 2s.     | 3495  | 348                                | 3841   | 4644            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Sport, 4d, 6p.       | 2872  | 227                                | 3099   | 4020            | Est. Wagon, 3s.     | 3595  | 353                                | 3948   | 4679            | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Super                |   |                                    |  |                 | VALIANT              |   |                                    |  |                 | Invicta             |   |                                    |  |                 | Convertible.....    | 2951  | 293                                | 3284   | 4101            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | V-100                |   |                                    |  |                 | Sedan, 4d.....      | 3045  | 312                                | 3357   | 4324            | Fiesta, 2s.....     | 3065  | 296                                | 3363   | 4447            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Sedan, 4d.....       | 1874  | 159                                | 2033   | 2635            | Hardtop, 2d.....    | 3129  | 318                                | 3447   | 4285            | Fiesta, 3s.....     | 3165  | 306                                | 3471   | 4471            |  |  |  |  |  |
| Super                |   |                                    |  |                 | Sedan, 4d.....       | 2164  | 181                                | 2345   | 2815            | Hardtop, 4d.....    | 3182  | 323                                | 3515   | 4365            | Series 88           |   |                                    |  |                 |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Sta. Wagon, 2s.      | 2278  | 190                                | 2468   | 2845            | Convertible.....    | 3290  | 330                                | 3620   | 4347            | Celeb. Sedan.....   | 2834  | 265                                | 2900   | 4106            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2224  | 203                                | 2427   | 3055            | Sta. Wagon, 3s.      | 2330  | 196                                | 2546   | 2860            | Est. Wagon, 2s.     | 3495  | 348                                | 3841   | 4644            | Hol. Coupe.....     | 2867  | 269                                | 2956   | 4051            |  |  |  |  |  |
| Super                |   |                                    |  |                 | V-200                |   |                                    |  |                 | Est. Wagon, 3s.     | 3595  | 353                                | 3948   | 4679            | Hol. Spt. Sed.....  | 2799  | 275                                | 3034   | 4151            |  |  |  |  |  |
| Sedan, 4d.....       | 2071  | 197                                | 2268   | 2948            | Sedan, 4d.....       | 1948  | 164                                | 2110   | 2685            | Invicta             |   |                                    |  |                 | Convertible.....    | 2951  | 293                                | 3284   | 4101            |  |  |  |  |  |
| Sta. Wag., 4d, 2s.   | 2   |                                    |  |                 |                      |   |                                    |  |                 |                     |   |                                    |  |                 |                     |   |                                    |  |                 |  |  |  |  |  |

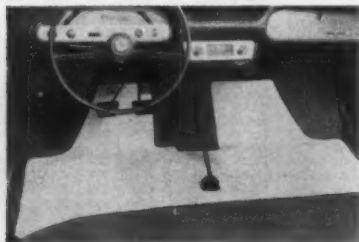


## New Products Shopping Center

### Front Floor Mat

*Provides one piece door to door protection*

Rubbermaid, Inc.: Compact cars can now be equipped with a custom fitting front floor mat which provides one piece door-to-door protection, company states. The new mat, known as the Kompact Kar-Rug, is designed to "stay put" with a nubbed under-surface to hold it in place. It is available in red, light blue, white, light green, gray, brown or black. A built-in-heel-rest reduces spot wear at the accelerator pedal, manufacturer said. The Kompact provides a custom fit for the Corvair, Falcon and for 1959 and 1960 Ambassadors, Larks and Ramblers. *Write:*

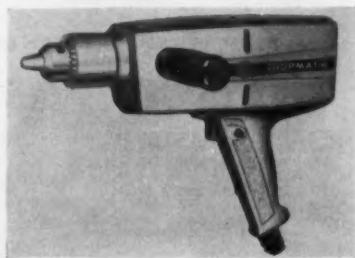


*William F. Coulter, Dir. of Sls., Rubbermaid, Inc., 1205 E. Bowman St., Wooster, Ohio, or phone HOward 2-7015.*

### Dual-Speed Drill

*Offers high and low drilling speeds*

Portable Electric Tools: A dual speed  $\frac{1}{4}$  inch and  $\frac{1}{2}$  inch power drill has been announced. A selector switch provides the operator with a high drilling speed for work in wood, plastics, masonite and light metals—or a high torque low speed to handle



drilling in concrete, cement, angle iron, or other materials. This new Shopmate two-speed  $\frac{1}{2}$ "- $\frac{1}{4}$ " power drill (model SD-122) gives full power on either speed range. *Write: Portable Electric Tools, 320 West 83rd St., Chicago 20, Ill.*

### Valve Stem Seals

*Can be installed without removing cylinder head*

Hastings Mfg. Co.: An improved

valve stem seal, incorporating Teflon as the sealing material to



stop oil leaks, is announced. A special spring around the seal keeps it snug around the stem for thousands of miles as valve and guide wear progresses, company states. The valve seals have two important advantages, according to the manufacturer. They may be installed without removing the cylinder head, and machining the valve guides is not necessary. *Write: Marshall H. Cook, Adv. Mgr., Hastings Mfg. Co., Hanover St., Hastings, Mich., or phone Windsor 5-2492.*

### Trailer Hitch Display

*Retractable hitch can be operated on display*

Big Boy Products Div., The Dalton Foundries: Features the Safe-A-Way Retractable Hitch; which can be operated right on



the display. The lower priced Fixt-Hitch is also displayed, as



are chrome plated and aluminum painted 1½ inch Coupler Balls (mounted right on the hitches). Display Kit, which is included in the package, has metal tire inset, window streamers and counter card. These display materials identify the dealer, point up consumer advantages of the Retractable Hitch and attract customers to the counter merchandiser. Write: Big Boy Products Division, The Dalton Foundries, Lincoln & Jefferson St., Warsaw, Ind.

### Automatic Battery Filler

*Eliminates over-flowing, spilling and splashing*

**United Motors Service, Div. of GM:** A battery filler equipped

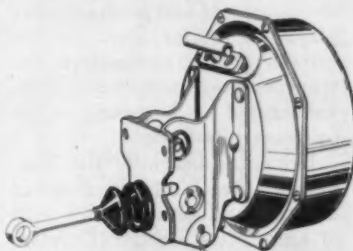


with a valve which automatically shuts off the flow when the proper levels are reached in the

cells is now available. Designed for service station and garage use, the two-quart capacity filler is durable and acid-proof it is stated. Over-filling, spilling and splashing are said to be eliminated and battery service time cut up to half. Write: Floyd Lawrence, United Motors Ser., Div. of G.M., Detroit 2, Mich. or phone TRinity 5-4700.

### Power Brake Unit

*For installation on 1960 Valiants*  
**The MoPar Division of Chrysler Motors Corp.:** A new Power Brake Unit for field installation on the 1960 Valiant is now available. The compact unit is designed for installation on the left



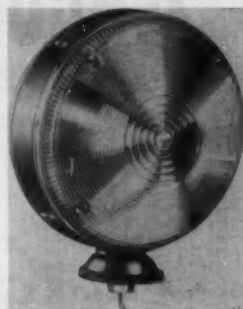
side of the firewall, which does not interfere with engine maintenance. Vacuum lines can be fastened to the intake manifold and vacuum tank, as all tubing is flared and cut to length for fast installation. The original master cylinder assembly on the car can be mounted on the booster assembly with minimum effort. Write: John T. Davis, Adver. Supervisor, Chrysler Motor Corp., Mopar Div., 7000 E. Eleven Mile Road, Center Line, Mich., or phone JE 9-3000.

### Emergency Lamp

*For use as emergency warning signals*

**Grote Manufacturing Co.:** The D-257 dual-faced emergency

warning lamp is introduced. It is one of company's high in-



tensity lamps for specific use as emergency warning signals for highway maintenance trucks, and other highway vehicles. The D-257 has two 7 inch shatterproof, fadeproof acrylic plastic lenses, mounted to provide warning signals in two directions. Write: Grote Mfg. Co., Lafayette & Grandview Aves., Bellevue, Ky.

### 2-Stage Unit Lift

*Telescoping hydraulic ram is pedal controlled*

**Weaver Mfg. Co.:** A mobile two-stage unit lift to facilitate the removal and servicing of automobile and light-truck transmissions has been introduced. The Weaver EC-140 Two Stage Unit Lift is portable, lightweight, and rated at 1,000 lbs. capacity. Its



telescoping hydraulic ram is pedal-controlled to leave the operator's hands free for positioning the unit. The table tilts for-

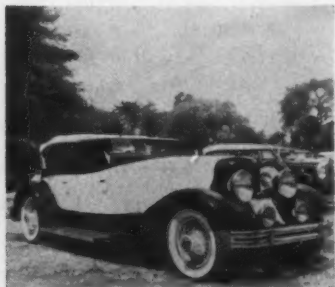
*Continued on page 90*

# Recollections



## Du Pont "Model H Sport Phaeton" in 1931 Show

Approximately 535 automobiles in a span of eight years of production bore the Du Pont nameplate. The car in the photograph is a special unit built es-



pecially for the New York Automobile Show in January, 1931. This was the Model "H," "Sport Phaeton." It had an eight cylinder engine on a 147 inch wheel base. It has a "V" type honeycomb radiator matrix and a highly lacquered radiator shell. The top and general lines of the car formed very pleasing and smooth lines. It was constructed of very heavy gauge metal and painted a two-tone black and white.

A custom luggage piece was mounted at the rear above the gas tank for use in touring.

It sported wire wheels with two spares on the rear covered with fabric. The passengers were protected from wind blast by an adjustable windshield attached to the back of the front seat. Only three cars were constructed in

1931; a sedan, one coupe and the "Sport Phaeton" which carried a price tag of approximately \$7,500.

## Leece-Neville Company Marks 50th Anniversary

A company whose research, developments and products have played a major part in the growth of the automotive and transportation industries, commemorated a half-century of business this Spring.

It was the Leece-Neville Company of Cleveland. The firm has been a manufacturer since 1910 of automotive electrical system components. It has long been recognized as one of the nation's leading producers of d.c. motors for automotive, truck, marine and aircraft applications.

Leece-Neville has prepared for its second 50 years by recording a record year for peacetime sales and earnings; embarking on a million dollar expansion program which includes entering the field of fractional horsepower a.c. motors; and by a substantial building of its executive staff. All of this during the past year.

Leece-Neville traces its history back to a small shop in Cleveland in 1910. The shop was organized to produce a motor-generator system for vehicles such as the old Haynes automobile.

The late B. M. "Ben" Leece

had been engaged in other electrical products development when the progress of the horseless carriage caught his eye. The Haynes component was the first in a long series of automotive developments out of the Leece-Neville organization. His founding partner, supplying the financial and business acumen, was the late S. M. Neville.



In 1915, gasoline was delivered to service stations in trucks like this. Leece-Neville was a principle supplier of starting motors and generators for this type vehicle.

One of the next and most significant developments out of Ben Leece's laboratory was an adapter kit mass produced for the starter of the 1912 Model T Ford.

Succeeding years saw development and production of the magnetic switch, now called the Solenoid; heavy-duty cranking motors for trucks and busses; and the voltage regulator.

# 1960 New Passenger Car Registrations\*

| STATE                | Model  | Buick | Cadillac | Chevrolet | Chrysler | Comet | De Soto | Dodge | Ford  | Imperial | Lincoln | Mercury | Oldsmobile | Plymouth | Pontiac | Rambler | Studebaker | All Others | Total  |
|----------------------|--------|-------|----------|-----------|----------|-------|---------|-------|-------|----------|---------|---------|------------|----------|---------|---------|------------|------------|--------|
| Alabama              | Mar.   | 381   | 178      | 3212      | 111      | 147   | 47      | 481   | 2182  | 26       | 27      | 225     | 513        | 573      | 525     | 555     | 122        | 1627       | 10340  |
|                      | 3 Mos. | 963   | 399      | 7290      | 232      | 147   | 89      | 963   | 5535  | 58       | 68      | 596     | 1206       | 1696     | 1167    | 1233    | 348        | 2237       | 23734  |
| Alaska               | Mar.   | 9     | 7        | 103       | 5        | ...   | 10      | 20    | 220   | 1        | 1       | 7       | 4          | 82       | 14      | 22      | 10         | 70         | 380    |
|                      | 3 Mos. | 18    | 32       | 255       | 17       | ...   | 10      | 20    | 220   | 1        | 1       | 20      | 24         | 125      | 42      | 51      | 28         | 254        | 1132   |
| Arizona              | Mar.   | 108   | 117      | 1010      | 36       | 9     | 8       | 146   | 986   | 6        | 23      | 114     | 160        | 256      | 246     | 278     | 65         | 487        | 4056   |
|                      | 3 Mos. | 293   | 266      | 2345      | 71       | 9     | 32      | 361   | 2482  | 19       | 71      | 295     | 481        | 560      | 540     | 796     | 158        | 1147       | 9983   |
| Arkansas             | Mar.   | 123   | 83       | 1096      | 38       | 34    | 15      | 167   | 895   | 5        | 9       | 78      | 223        | 209      | 180     | 182     | 38         | 226        | 3986   |
|                      | 3 Mos. | 304   | 230      | 3476      | 105      | 34    | 59      | 579   | 3572  | 28       | 44      | 363     | 770        | 701      | 742     | 657     | 228        | 1322       | 13013  |
| California           | Mar.   | 1689  | 1740     | 14312     | 533      | 478   | 149     | 3050  | 12013 | 210      | 289     | 1367    | 2448       | 4233     | 3140    | 3889    | 1234       | 7138       | 57961  |
|                      | 3 Mos. | 4821  | 4821     | 37261     | 1816     | 470   | 400     | 7165  | 36026 | 500      | 859     | 4133    | 6905       | 9766     | 7876    | 10619   | 3128       | 20785      | 156661 |
| Colorado             | Mar.   | 182   | 101      | 1281      | 80       | 40    | 20      | 296   | 1043  | 11       | 25      | 131     | 224        | 312      | 290     | 359     | 122        | 391        | 4548   |
|                      | 3 Mos. | 560   | 329      | 3792      | 180      | 40    | 58      | 748   | 3400  | 39       | 72      | 418     | 731        | 864      | 817     | 991     | 306        | 1149       | 14496  |
| Connecticut          | Mar.   | 177   | 131      | 1580      | 63       | 73    | 18      | 350   | 1233  | 13       | 18      | 179     | 295        | 589      | 310     | 491     | 176        | 790        | 6478   |
|                      | 3 Mos. | 557   | 486      | 4302      | 206      | 73    | 86      | 1010  | 3811  | 62       | 96      | 533     | 880        | 1806     | 1090    | 1486    | 445        | 2509       | 19482  |
| Delaware             | Mar.   | 37    | 36       | 393       | 21       | 6     | 12      | 88    | 264   | 4        | 5       | 13      | 65         | 128      | 100     | 55      | 29         | 121        | 1317   |
|                      | 3 Mos. | 161   | 128      | 1209      | 57       | 6     | 22      | 269   | 972   | 9        | 22      | 96      | 283        | 445      | 363     | 239     | 99         | 829        | 4548   |
| District of Columbia | Mar.   | 94    | 91       | 697       | 37       | 14    | 15      | 153   | 483   | 12       | 24      | 44      | 133        | 246      | 130     | 165     | 45         | 356        | 2715   |
|                      | 3 Mos. | 139   | 211      | 1540      | 103      | 14    | 30      | 332   | 1129  | 31       | 41      | 119     | 306        | 573      | 342     | 339     | 102        | 837        | 6099   |
| Florida              | Mar.   | 745   | 689      | 5365      | 190      | 117   | 89      | 880   | 4369  | 57       | 117     | 408     | 989        | 1397     | 1053    | 1142    | 372        | 3886       | 21818  |
|                      | 3 Mos. | 2035  | 1934     | 16795     | 529      | 117   | 191     | 1854  | 12731 | 198      | 381     | 1147    | 2770       | 3481     | 2583    | 3127    | 1020       | 10354      | 61217  |
| Georgia              | Mar.   | 438   | 197      | 2832      | 97       | 3     | 32      | 405   | 2878  | 14       | 31      | 226     | 487        | 585      | 818     | 471     | 178        | 1478       | 11196  |
|                      | 3 Mos. | 980   | 448      | 5613      | 198      | 3     | 70      | 795   | 6391  | 40       | 81      | 511     | 1079       | 1166     | 1577    | 1009    | 385        | 3298       | 23843  |
| Hawaii               | Mar.   | 29    | 25       | 411       | 23       | 6     | 4       | 94    | 34    | 3        | 3       | 15      | 31         | 262      | 142     | 32      | 86         | 311        | 13966  |
|                      | 3 Mos. | 80    | 68       | 1073      | 6        | 6     | 6       | 113   | 873   | 13       | 8       | 44      | 96         | 644      | 405     | 32      | 86         | 1920       | 36425  |
| Idaho                | Mar.   | 68    | 44       | 437       | 22       | 5     | 8       | 113   | 370   | 4        | 5       | 41      | 113        | 90       | 129     | 154     | 40         | 147        | 1790   |
|                      | 3 Mos. | 224   | 142      | 1124      | 57       | 5     | 26      | 286   | 1630  | 15       | 26      | 147     | 306        | 251      | 361     | 478     | 127        | 452        | 5057   |
| Illinois             | Mar.   | 1724  | 1082     | 10895     | 433      | 312   | 163     | 1903  | 7016  | 78       | 172     | 854     | 2204       | 2174     | 2859    | 2060    | 680        | 2129       | 36545  |
|                      | 3 Mos. | 5468  | 2944     | 28218     | 1431     | 312   | 634     | 5306  | 21836 | 327      | 669     | 2804    | 6725       | 6482     | 7873    | 5864    | 1906       | 5582       | 104485 |
| Indiana              | Mar.   | 755   | 308      | 3819      | 180      | 6     | 102     | 741   | 2837  | 34       | 61      | 368     | 677        | 970      | 967     | 740     | 497        | 662        | 13804  |
|                      | 3 Mos. | 1792  | 785      | 9294      | 414      | 6     | 238     | 1706  | 7348  | 100      | 172     | 944     | 2135       | 2942     | 2243    | 1824    | 1181       | 302        | 18913  |
| Iowa                 | Mar.   | 273   | 194      | 2146      | 47       | 32    | 13      | 196   | 1101  | 10       | 8       | 180     | 330        | 468      | 406     | 429     | 119        | 807        | 8913   |
|                      | 3 Mos. | 836   | 311      | 5147      | 290      | 47    | 100     | 1006  | 4120  | 32       | 48      | 581     | 992        | 1067     | 1018    | 1146    | 311        | 807        | 17819  |
| Kansas               | Mar.   | 371   | 132      | 2440      | 74       | 45    | 21      | 401   | 1889  | 14       | 31      | 162     | 433        | 471      | 454     | 511     | 132        | 494        | 8075   |
|                      | 3 Mos. | 944   | 367      | 5590      | 200      | 45    | 85      | 956   | 5093  | 49       | 73      | 489     | 1121       | 1070     | 1209    | 1286    | 393        | 1341       | 20311  |
| Kentucky             | Mar.   | 194   | 83       | 1662      | 39       | 61    | 30      | 272   | 1272  | 5        | 13      | 143     | 325        | 366      | 306     | 311     | 86         | 304        | 5552   |
|                      | 3 Mos. | 728   | 248      | 4596      | 121      | 61    | 77      | 738   | 3811  | 26       | 82      | 430     | 957        | 1006     | 946     | 886     | 274        | 911        | 13966  |
| Louisiana            | Mar.   | 287   | 133      | 2603      | 65       | 152   | 41      | 312   | 1882  | 10       | 154     | 472     | 852        | 1054     | 883     | 382     | 81         | 1319       | 8199   |
|                      | 3 Mos. | 856   | 385      | 6891      | 176      | 52    | 96      | 793   | 6077  | 50       | 59      | 497     | 1356       | 930      | 1602    | 965     | 297        | 2847       | 23731  |
| Maine                | Mar.   | 95    | 54       | 743       | 15       | 29    | 18      | 142   | 573   | 2        | 6       | 89      | 94         | 245      | 122     | 225     | 67         | 323        | 2820   |
|                      | 3 Mos. | 199   | 110      | 1515      | 54       | 29    | 32      | 305   | 1302  | 6        | 14      | 154     | 200        | 450      | 283     | 505     | 138        | 721        | 6015   |
| Maryland             | Mar.   | 382   | 190      | 3368      | 143      | 80    | 87      | 718   | 2299  | 22       | 21      | 254     | 433        | 1023     | 619     | 719     | 195        | 1057       | 11578  |
|                      | 3 Mos. | 902   | 517      | 7995      | 373      | 80    | 188     | 1682  | 6107  | 65       | 73      | 584     | 1129       | 2586     | 1818    | 1711    | 492        | 2785       | 28785  |
| Massachusetts        | Mar.   | 503   | 357      | 3576      | 207      | 182   | 88      | 900   | 2674  | 38       | 76      | 492     | 789        | 1295     | 708     | 1336    | 243        | 1440       | 14989  |
|                      | 3 Mos. | 1308  | 878      | 7945      | 585      | 182   | 238     | 2167  | 7348  | 132      | 162     | 831     | 2034       | 2962     | 1787    | 2492    | 632        | 586        | 26425  |
| Michigan             | Mar.   | 2051  | 586      | 12574     | 384      | 1042  | 173     | 3073  | 10788 | 137      | 140     | 1894    | 2869       | 3172     | 3402    | 2254    | 457        | 1987       | 45763  |
|                      | 3 Mos. | 5342  | 2974     | 29399     | 1086     | 1042  | 519     | 6782  | 29155 | 309      | 493     | 4322    | 6502       | 7744     | 8101    | 5390    | 1668       | 4791       | 115038 |
| Minnesota            | Mar.   | 504   | 207      | 3298      | 180      | 100   | 57      | 616   | 2648  | 14       | 42      | 215     | 786        | 925      | 783     | 739     | 254        | 770        | 12179  |
|                      | 3 Mos. | 1421  | 688      | 7275      | 380      | 100   | 158     | 1482  | 6844  | 61       | 101     | 885     | 1823       | 2019     | 1841    | 1962    | 607        | 1618       | 29076  |
| Mississippi          | Mar.   | 211   | 69       | 1385      | 28       | 53    | 14      | 171   | 993   | 3        | 8       | 84      | 264        | 290      | 238     | 194     | 87         | 326        | 4396   |
|                      | 3 Mos. | 568   | 172      | 3970      | 80       | 53    | 33      | 361   | 2568  | 13       | 25      | 196     | 665        | 632      | 640     | 439     | 205        | 871        | 10613  |
| Missouri             | Mar.   | 623   | 278      | 4911      | 183      | 39    | 63      | 680   | 3176  | 33       | 33      | 332     | 866        | 1122     | 864     | 894     | 187        | 974        | 15931  |
|                      | 3 Mos. | 1379  | 662      | 9556      | 338      | 38    | 127     | 1755  | 6388  | 86       | 103     | 727     | 1851       | 2251     | 1905    | 1919    | 451        | 2208       | 34103  |
| Montana              | Mar.   | 119   | 52       | 545       | 17       | 2     | 7       | 182   | 455   | 17       | 5       | 77      | 134        | 132      | 121     | 155     | 49         | 176        | 2225   |
|                      | 3 Mos. | 294   | 124      | 1225      | 49       | 2     | 23      | 314   | 1176  | 30       | 20      | 208     | 300        | 254      | 281     | 374     | 122        | 355        | 5181   |
| Nebraska             | Mar.   | 133   | 88       | 1216      | 39       | 21    | 20      | 259   | 906   | 8        | 7       | 79      | 206        | 250      | 191     | 242     | 42         | 189        | 3994   |
|                      | 3 Mos. | 463   | 246      | 3400      | 121      | 21    | 49      | 659   | 2635  | 25       | 31      | 315     | 625        | 656      | 611     | 704     | 163        | 518        | 11442  |
| Nevada               | Mar.   | 24    | 32       | 315       | 14       | ...   | 6       | 43    | 229   | 4        | 19      | 57      | 52         | 69       | 99      | 60      | 16         | 282        | 1281   |
|                      | 3 Mos. | 70    | 86       | 587       | 31       | ...   | 10      | 98    | 549   | 15       | 47      | 139     | 127        | 149      | 155     | 163     | 86         | 520        | 2633   |
| New Hampshire        | Mar.   | 90    | 31       | 69        | 17       | ...   | 7       | 150   | 32    | 3        | 6       | 7       | 162        | 97       | 82      | 224     | 84         | 242        | 2402   |
|                      | 3 Mos. | 124   | 69       | 1194      | 43       | 25    | 19      | 290   | 1069  | 12       | 29      | 147     | 185        | 313      | 214     | 447     | 148        | 577        | 4687   |
| New Jersey           | Mar.   | 897   | 811      | 5071      | 529      | 280   | 175     | 1901  | 4248  | 84       | 110     | 536     | 1344       | 2216     | 1969    | 1609    | 420        | 2149       | 24548  |
|                      | 3 Mos. | 2478  | 2174     | 15165     | 1482     | 289   | 613     | 3975  | 12268 | 308      | 381     | 1585    | 3594       | 5585     | 3822    | 4129    | 1130       | 5830       | 64708  |
| New Mexico           | Mar.   | 45    | 38       | 426       | 24       | 7     | 5       | 48    | 359   | 7        | 6       | 40      | 90         | 113      | 116     | 63      | 32         | 171        | 1621   |
|                      | 3 Mos. | 168   | 112      | 1216      | 66       | 7     | 16      | 185   | 1114  | 20       | 12      | 131     | 272        | 246      | 297     | 253     | 105        | 442        | 4624   |
| New York             | Mar.   | 2147  | 2024     | 12595     | 1379     | 379   | 427     | 3755  | 9039  | 236      | 248     | 1451    | 3710       | 5919     | 3626    | 3946    | 1219       | 5374       | 57189  |
|                      | 3 Mos. | 5329  | 4589     | 26243     | 2930     | 379   | 622     | 8430  | 23657 | 550      | 715     | 3390    | 8337       | 11211    | 8267    | 8463    | 2838       | 13431      | 131611 |
| North Carolina       | Mar.   | 409   | 167      | 2909      | 77       | 78    | 35      | 439   | 2965  | 10       | 23      | 180     | 477        | 692      | 611     | 503     | 179        | 1072       | 10617  |
|                      | 3 Mos. | 1267  | 494      | 7458      | 288      | 78    | 109     | 1167  | 7965  | 45       | 64      | 560     | 1290       | 1750     | 1595    | 1290    | 486        | 2850       | 28758  |
| North Dakota         | Mar.   | 87    | 26       | 437       | 28       | 12    | 7       | 92    | 363   | 2        | 4       | 58      | 93         | 119      | 67      | 99      | 23         | 64         | 1511   |
|                      | 3 Mos. | 185   | 96       | 1191      | 67       | 12    | 36      | 294   | 1220  | 9        | 15      | 188     | 304        | 370      | 218     | 234     | 72         | 159        | 4682   |
| Ohio                 | Mar.   | 1596  | 819      | 10892     | 432      | 576   | 177     | 2704  | 8952  | 60       | 160     | 1257    | 2109       | 2971     | 2617    | 2149    | 699        | 2241       | 40363  |
|                      | 3 Mos. | 4490  | 2238     | 25395     | 1136     | 876   | 618     | 6352  | 23879 | 212      | 329     | 3216    | 5564       | 7485     | 6404    | 5399    | 1682       | 6849       | 100198 |
| Oklahoma             | Mar.   | 235   | 123      | 1896      | 48       | 33    | 25      | 223   | 1579  | 5        | 18      | 142     | 353        | 362      | 368     | 258     | 62         | 376        | 6157   |
|                      | 3 Mos. | 629   | 342      | 4337      | 122      | 33    | 61      | 524   | 3624  | 23       | 50      | 344     | 897        | 817      | 702     | 220     | 862        | 14877      | 17794  |
| Oregon               | Mar.   | 246   | 115      | 1714      | 53       | 1     | 26      | 252   | 1538  | 20       | 29      | 191     | 322        | 430      | 391     | 630     | 162        | 814        | 8934   |
|                      |        |       |          |           |          |       |         |       |       |          |         |         |            |          |         |         |            |            |        |

# THE CHILTON MANUAL PAGE

A monthly service for the users of  
Chilton's Flat Rate and  
Auto Repair Manuals



By  
**Paul A. Murphy**  
Editor of  
Automotive Manuals

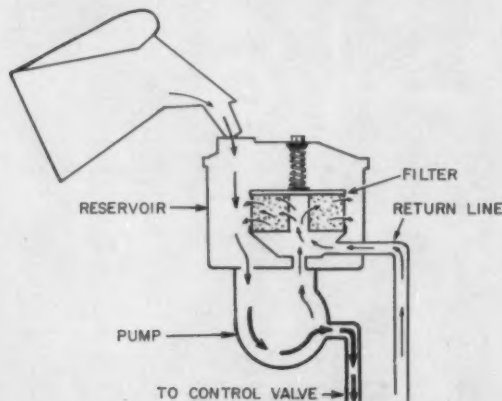


## Power Steering Problems

**D**IRT, in the power steering oil system, is one of the principal causes for failures. For this reason, cleanliness cannot be over-stressed.

Some mechanics are under the opinion that the filter located in the fluid reservoir will screen out any foreign matter. Unfortunately, in some instances this is not true.

One some power steering units the filter element is so located that it only filters the return oil. This means that if oil containing foreign matter is poured into the oil reservoir it will be pumped thru the entire system before it comes in contact with the filter.



We had one low mileage unit fail due to the fact that the relief valve was jammed in the open position (dirt between the piston and housing). A tear-down examination of the pump showed that the dirt had scored the pump housing also.

We checked further and found that the lubrication man was at fault. He had a working habit of pumping Type A fluid into an open top, one-quart oil can that had been squeezed elongated as an aid to pouring. When not in use this can was simply placed on the workbench where it could collect any amount of dirt.

## Fluids & Brake Failures

Leading automotive manufacturers and the Society of Automotive Engineers have warned that only "heavy duty" brake fluids should be considered for service work. As a matter of fact, SAE has withdrawn its approval of so-called "moderate duty" brake fluids because they're "considered dangerous for bigger, more powerful cars and trucks of recent vintage."

In special tests conducted by the SAE, it developed that a modern vehicle (late fifties model) weighing 4000 lb. and stopped repeatedly at high speeds may generate brake fluid temperatures of 250° or greater. At this

*Continued on page 78*



**FOR BANNER SUMMER PROFITS**

# MOPAR VACATION TUNE-UPS

The Big Road Show is on again! Vacations mean extra driving, extra mileage for your customers—more service business, additional profit opportunities for you.

You make the most of your before-vacation—and after-vacation—car checkups when you go MoPar—all the way! With exclusive MoPar replacement parts, you get:

- Precision-engineered parts that install easier, faster.
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Now is the time to get set for the Banner Vacation Tune-up Season. Get on the phone and get off to the biggest summer you've ever had. Call your MoPar Wholesaler, or your Valiant, Plymouth, Dodge, DeSoto, Chrysler, Imperial or Dodge Truck Dealer, TODAY!

**Sell the line that keeps your customer sold on you—MoPar**

# BODY SHOP TIPS

## Use Rubber Hammer To Remove Upholstery Panels

In taking off upholstery panels to work on the inside of doors use a rubber hammer. The edges of the fiber upholstery is held to the metal of the doors by nails with clips on the ends that fit in holes. By beating with the flat of the hammer up and down the edges first, you'll find that it loosens these clips without damaging the upholstery. A screwdriver may then be inserted and the panels are easier to pry off. *G. D. Lynch, George's Garage, Asheville, N.C.*

## Easy Way To Fill Holes in Hoods

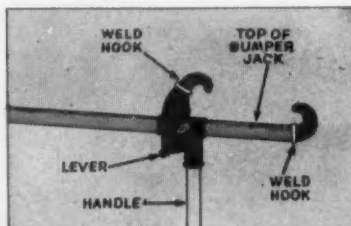
To fill holes in hoods, trunk lids, etc., I ream the hole with a 45 degree reamer. Then I insert a sheet metal screw and a bottle cap. This method is permanent, inexpensive and there is no metal warpage. Just grind off the screw, bend and prime. *Dean Yaddow, Yaddow's Collision Service, Bombay, N.J.*

## Wooden Dollies Handy In Paint And Body Work

We find a number of ruggedly constructed castered wooden dollies very handy in our paint and body work. Since appliance painting is one of our profitable sidelines, the dollies ease the task of moving the heavy appliances to and from painting area. When you've got a wreck job, seats, upholstery and other parts are placed on a dolly so the lot is complete for that particular wreck job. That way there's no hunting for misplaced parts since each

wreck job is assigned its own dolly. This invariably saves time and avoids confusion when it comes time to button up the particular job, because parts haven't been scattered all over the body shop by then. *Harry J. Miller, 991 Forty-Second St., Sarasota, Fla.*

## Tool For Pulling Car Fenders Together



The idea I have is one used for many years around the shop is good for pulling fenders together or any other job of pulling in the body shop. You can use chains or fender straps on the welded hooks. The tool can be made up very quickly. All you need is a mechanical bumper jack. Then weld a hook to the top and another on the ramp and you're in business! *Lannie Offret, 196 So. 9th West, Provo, Utah.*

## Using Caulking Compound Helps in Starting Bolts

As a help in starting bolts or nuts in tight or awkward places, use a small amount of caulking compound to hold it secure in the wrench or socket until the nut or bolt is started. A small wad of caulking compound on the end of the screwdriver bit will safely hold screws and stove bolts in

order to get them started in places that can't be reached with the fingers. This works with Phillips and Clutch head screws, which can't be started with a screw-starter. *Don Baxter, 1607 9th St., Woodward, Okla.*

## Speeding Job Of Placing Side Moldings On Car

To speed up the job of placing side moldings on fenders and doors, use body caulking puddy as needed on the inside of moldings. Then press on door, fender or quarter panel. Pencil mark the molding. Then remove and drill holes where needed. This enables one man to do the job instead of two. *B. E. Vetterick, Expert Auto Rebuilders, 523 West 103rd St., Chicago 28, Ill.*

## Removing Clips From Name Plates Without Breaking Prongs

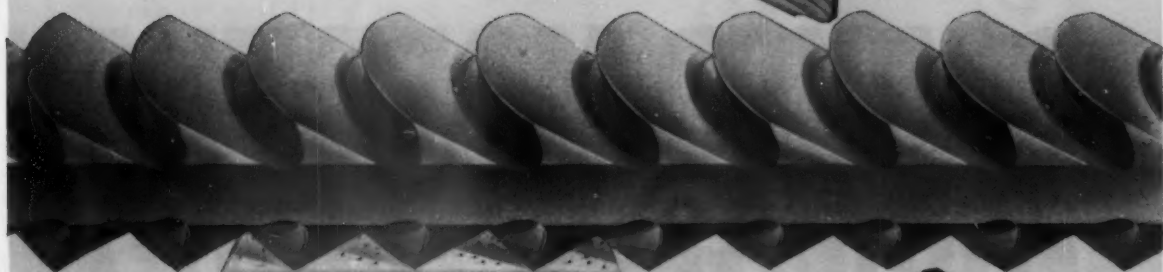
I have found an easy way to remove clips from name plates and emblems without breaking the prongs off. Just use an acetylene torch with a small tip and a very oxidizing flame. Simply melt the clip at the thinnest edge, being careful not to put the flame on the prong. This works very well, if done quickly so as not to heat up the prong. Use a new clip to put the name plate back on. *Clayton Rivard, Taylors Falls, Minn.*

**BODY SHOP TIPS  
are worth**

**\$7.50**

If you've developed an Idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

**DESIGNED  
TO DUPLICATE  
THE ORIGINAL FINISH  
OF ANY CAR!**



# Heller VIXEN *Milled-Curved Tooth* Files

**FACTORY FINISHES COME NATURALLY** when Heller VIXEN Files are used on body repair jobs... because they're the same files the leading car makers use to produce paintable surfaces without extra filing or polishing.

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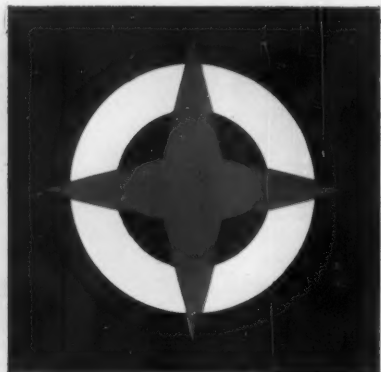


17-8, 17

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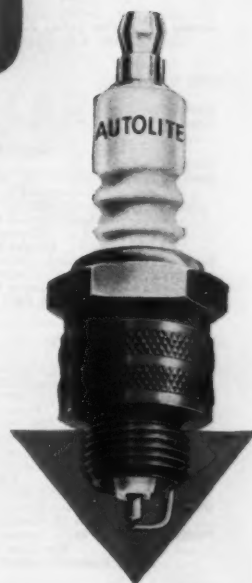
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 **AUTOLITE® SPARK PLUGS**

IGNITION ENGINEERED FOR ALL CARS

# 1960 Tune Up—Alignment Specifications

| MAKE<br>AND<br>MODEL                                   | ENGINE          | No. of<br>Cylinders<br>Bore and<br>(In.) | Maximum Brake H.P. | Spark Plug<br>Make and<br>Size (mm.) | TUNE-UP DATA    |                   |                                  |                  |                         |               |                      |                         |                      |                  | FRONT END ALIGNMENT                 |                  |                  |                 |
|--|-----------------|--|--------------------|--------------------------------------|-----------------|-------------------|----------------------------------|------------------|-------------------------|---------------|----------------------|-------------------------|----------------------|------------------|-------------------------------------|------------------|------------------|-----------------|
|  |                 |  |                    |                                      | VALVES          |                   |                                  |                  | IGNITION                |               |                      |                         |                      |                  | Steering Axis<br>Inclination (Deg.) | Caster<br>(Deg.) | Camber<br>(Deg.) | Toe-in<br>(In.) |
|  |                 |  |                    |                                      | Seat<br>Angle   |                   | Clearance<br>Tappet<br>Operating |                  | Breaker Point Gap (In.) |               | Cam Angle (Deg.)     |                         | Spark Plug Gap (In.) |                  |                                     |                  |                  |                 |
|  |                 |  |                    |                                      | Inlet<br>(Deg.) | Exhaust<br>(Deg.) | Inlet<br>(In.)                   | Exhaust<br>(In.) |                         |               | Spark Plug Gap (In.) | Spark<br>Occurs<br>T.C. |                      |                  |                                     |                  |                  |                 |
| AMERICAN MOTORS CORP.                                  |                 |  |                    |                                      |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |
| Rambler... American 8-6001 Deluxe, Super               | 6-3 1/2 x 4 1/2 | 90                                       | CA-14              | 45                                   | 45              | .016C             | .018C                            | .020             | 39                      | .035          | 38                   | 8                       | 0 to 1/2 P           | 1/2 N to 1/2 P   | 1/2 N to 1/2 P                      | 1/2 to 1/2       |                  |                 |
| ..... American 8-6001 Custom                           | 6-3 1/2 x 4 1/2 | 125                                      | CA-14              | 45                                   | 45              | .012H             | .018H                            | .016             | 32                      | .035          | 38                   | 8                       | 0 to 1/2 P           | 1/2 N to 1/2 P   | 1/2 N to 1/2 P                      | 1/2 to 1/2       |                  |                 |
| ..... Six 8-6010                                       | 6-3 1/2 x 4 1/2 | 127                                      | CA-14              | 45                                   | 45              | .012H             | .018H                            | .016             | 32                      | .035          | 38                   | 8                       | 0 to 1/2 P           | 1/2 N to 1/2 P   | 1/2 N to 1/2 P                      | 1/2 to 1/2       |                  |                 |
| ..... Rebel 8-6020                                     | 6-3 1/2 x 3 1/2 | 200                                      | CA-14              | 30                                   | 45              | .012H             | .014H                            | .017             | 30                      | .035          | TC                   | 6 11"                   | 0 to 1/2 P           | 1/2 N to 1/2 P   | 1/2 N to 1/2 P                      | 1/2 to 1/2       |                  |                 |
| ..... Ambassador 8-6080                                | 8-4 x 3 1/2     | 250                                      | CA-14              | 30                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | TC                   | 6 11"                   | 0 to 1/2 P           | 1/2 N to 1/2 P   | 1/2 N to 1/2 P                      | 1/2 to 1/2       |                  |                 |
| CHECKER MOTORS CORP.                                   |                 |  |                    |                                      |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |
| Superba... A-10L                                       | 6-3 1/2 x 4 1/2 | 80                                       | Ch-18              | 30                                   | 44              | .014H             | .014H                            | .020             | 39                      | .029          | 4B                   | 7                       | 2P                   | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... A-10   | 6-3 1/2 x 4 1/2 | 122                                      | Ch-14              | 30                                   | 44              | .017H             | .023H                            | .020             | 39                      | .033          | 3 1/2 B              | 7                       | 2P                   | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| CHRYSLER CORP.   |                 |  |                    |                                      |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |
| Chrysler... Windsor 8-PC1-L                            | 8-4 1/2 x 3 1/2 | 305                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Saratoga 8-PC2-M                                 | 8-4 1/2 x 3 1/2 | 325                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... New Yorker 8-PC3-H                               | 8-4 1/2 x 3 1/2 | 350                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 5B                   | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-300F (Engine Option)                           | 8-4 1/2 x 3 1/2 | 400                                      | ACH-14             | 45                                   | 45              | .016C             | .028C                            | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| De Soto... Firefly 8-PS1-L                             | 8-4 1/2 x 3 1/2 | 295                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Adventurer 8-PS3-M                               | 8-4 1/2 x 3 1/2 | 305                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PS1-L, PS3-M (Engine Option)                   | 8-4 1/2 x 3 1/2 | 325                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 12 1/2 B | 12 1/2 B             | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PS3-M (Engine Option)                          | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 7 1/2 B  | 7 1/2 B              | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Dodge... Matador 8-PD1-L                               | 8-4 1/2 x 3 1/2 | 295                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Polara 8-PD2-H                                   | 8-4 1/2 x 3 1/2 | 325                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PD1-L, PD2-H (Engine Option)                   | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 7 1/2 B  | 7 1/2 B              | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Dodge Dart... Seneca 8-PD3-L                           | 8-3 1/2 x 3 1/2 | 145                                      | AL-14              | 45                                   | 46              | .010H             | .020H                            | .020             | 39                      | .035          | 2 1/2 B              | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Pioneer 8-PD3-M, Phoenix PD3-H                   | 8-3 1/2 x 3 1/2 | 230                                      | AL-14              | 45                                   | 46              | .010H             | .018H                            | .017             | 30                      | .035          | 5B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Seneca 8-PD4-L, Pioneer 8-PD4-M, Phoenix 8-PD4-H | 8-3 1/2 x 3 1/2 | 255                                      | AL-14              | 45                                   | 45              | .010H             | .018H                            | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PD4-H (Early Models)                           | 8-4 1/2 x 3 1/2 | 310                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 7 1/2 B  | 7 1/2 B              | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PD4-H (Engine Option)                          | 8-4 1/2 x 3 1/2 | 325                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 12 1/2 B | 12 1/2 B             | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PD4-H (Engine Option)                          | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 7 1/2 B  | 7 1/2 B              | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PD4-H (Engine Option)                          | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 12 1/2 B | 12 1/2 B             | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Imperial... Custom, Crown, LeBaron 8-PY1               | 8-4 1/2 x 3 1/2 | 350                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Plymouth... Savoy, Belvedere, Fury 8-PP1               | 8-3 1/2 x 4 1/2 | 145                                      | AL-14              | 45                                   | 47              | .010H             | .020H                            | .020             | 39                      | .035          | 2 1/2 B              | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Savoy, Belvedere, Fury 8-PP2                     | 8-3 1/2 x 3 1/2 | 230                                      | AL-14              | 45                                   | 45              | .010H             | .018H                            | .017             | 30                      | .035          | 5B                   | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-3 1/2 x 3 1/2 | 260                                      | AL-14              | 45                                   | 45              | .010H             | .018H                            | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 305                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 10B                  | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 310                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035          | 5B                   | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 325                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 12 1/2 B | 12 1/2 B             | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 12 1/2 B | 12 1/2 B             | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-PP2 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 330                                      | AL-14              | 45                                   | 45              | Hyd               | Hyd                              | .017             | 30                      | .035 7 1/2 B  | 7 1/2 B              | 6 1/2                   | 0 to 1N              | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Valiant... 8-V100 QX1-L, V-200 QX1-H                   | 6-3 1/2 x 3 1/2 | 161                                      | AL-14              | 45                                   | 47              | .010H             | .020H                            | .020             | 39                      | .035          | 5B                   | 7 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8-V100, V200 (Engine Option)                     | 6-3 1/2 x 3 1/2 | 148                                      | AL-14              | 47                                   | 47              | .010H             | .020H                            | .020             | 39                      | .018          | 11B                  | 7 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| FORD MOTOR CO.   |                 |  |                    |                                      |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |
| Comet... 8   | 6-3 1/2 x 2 1/2 | 90                                       | Ch-18              | 45 1/2                               | 45 1/2          | .016H             | .016H                            | .025             | 37                      | .034          | 2B                   | 7                       | 1P to 2P             | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Edsel... Ranger-6                                      | 6-3 1/2 x 3 1/2 | 145                                      | Ch-18              | 45 1/2                               | 45 1/2          | .019H             | .019H                            | .025             | 37                      | .034          | 4B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Ranger-8   | 8-4 1/2 x 3 1/2 | 185                                      | Ch-18              | 45 1/2                               | 45 1/2          | .019H             | .019H                            | .015             | 27                      | .034          | 3B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Falcon... 8 (Engine Option)                            | 8-4 1/2 x 3 1/2 | 300                                      | Ch-18              | 60 1/2                               | 45 1/2          | Hyd               | Hyd                              | .015             | 27                      | .034          | 3B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... 8  | 6-3 1/2 x 2 1/2 | 90                                       | Ch-18              | 45 1/2                               | 45 1/2          | .016H             | .016H                            | .025             | 37                      | .034          | 2B                   | 7                       | 1P to 2P             | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Ford... Fairlane, Fairlane 500, Galaxie-6              | 8-3 1/2 x 3 1/2 | 145                                      | Ch-18              | 45 1/2                               | 45 1/2          | .019H             | .019H                            | .025             | 37                      | .034          | 4B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Fairlane, Fairlane 500, Galaxie-6                | 8-3 1/2 x 3 1/2 | 185                                      | Ch-18              | 45 1/2                               | 45 1/2          | .019H             | .019H                            | .015             | 27                      | .034          | 3B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... All Models (Engine Option)                       | 8-4 1/2 x 3 1/2 | 235                                      | Ch-18              | 60 1/2                               | 45 1/2          | Hyd               | Hyd                              | .015             | 27                      | .034          | 3B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... All Models (Engine Option)                       | 8-4 1/2 x 3 1/2 | 300                                      | Ch-18              | 60 1/2                               | 45 1/2          | Hyd               | Hyd                              | .015             | 27                      | .034          | 3B                   | 6 1/2                   | 1/2 N to 1 1/2 N     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Thunderbird-8                                    | 8-4 1/2 x 3 1/2 | 300                                      | Ch-18              | 60 1/2                               | 45 1/2          | Hyd               | Hyd                              | .015             | 27                      | .034          | 4B                   | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... (Engine Option)                                  | 8-4 1/2 x 3 1/2 | 350                                      | Ch-18              | 45 1/2                               | 45 1/2          | Hyd               | Hyd                              | .015             | 27                      | .034          | 4B                   | 6 1/2                   | 1/2 P to 1 1/2 P     | 1/2 P to 1 1/2 P | 1/2 P to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Lincoln... Lincoln, Premiere, Continental-8            | 8-4 1/2 x 3 1/2 | 315                                      | Ch-18              | 45                                   | 45              | Hyd               | Hyd                              | .015             | 27                      | .034          | 6B                   | 7 20"                   | 0 to 1 1/2 N         | 0 to 1 1/2 P     | 0 to 1 1/2 P                        | 0 to 1 1/2       |                  |                 |
| Mercury... Mercury-8                                   | 8-4 1/2 x 3 1/2 | 205                                      | Ch-18              | 45                                   | 45              | .018H             | .018H                            | .015             | 27                      | .034          | 3B                   | 7                       | 0 to 1 1/2 N         | 0 to 1 1/2 P     | 0 to 1 1/2 P                        | 0 to 1 1/2       |                  |                 |
| ..... Mercury-8 (Engine Option)                        | 8-4 1/2 x 3 1/2 | 280                                      | Ch-18              | 45                                   | 45              | Hyd               | Hyd                              | .015             | 27                      | .034          | 6B                   | 7                       | 0 to 1 1/2 N         | 0 to 1 1/2 P     | 0 to 1 1/2 P                        | 0 to 1 1/2       |                  |                 |
| ..... Montclair, Park Lane-8                           | 8-4 1/2 x 3 1/2 | 310                                      | Ch-18              | 45                                   | 45              | Hyd               | Hyd                              | .015             | 27                      | .034          | 6B                   | 7                       | 0 to 1 1/2 N         | 0 to 1 1/2 P     | 0 to 1 1/2 P                        | 0 to 1 1/2       |                  |                 |
| GENERAL MOTORS CORP.                                   |                 |  |                    |                                      |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |
| Buick... Le Sabre 8-4400                               | 8-4 1/2 x 3 1/2 | 250                                      | AC-14              | 45                                   | 45              | Hyd               | Hyd                              | .015             | 30                      | .033          | 5B                   | 7                       | 2N                   | 1/2 P            | 1/2 P                               | 1/2 to 1 1/2     |                  |                 |
| ..... Invisia 8-4600; Electra 8-4700, 4800             | 8-4 1/2 x 3 1/2 | 325                                      | AC-14              | 45                                   | 45              | Hyd               | Hyd                              | .015             | 30                      | .033          | 12B                  | 7                       | 2N                   | 1/2 P            | 1/2 P                               | 1/2 to 1 1/2     |                  |                 |
| Cadillac... 8-62, 60, 75                               | 8-4 1/2 x 3 1/2 | 325                                      | AC-14              | 44                                   | 44              | Hyd               | Hyd                              | .016             | 30                      | .035          | 5B                   | 4                       | 1/2 N to 1 1/2 N     | 1/2 N to 1 1/2 P | 1/2 N to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| ..... Eldorado 8-62                                    | 8-4 1/2 x 3 1/2 | 345                                      | AC-14              | 44                                   | 44              | Hyd               | Hyd                              | .016             | 30                      | .035          | 5B                   | 4                       | 1/2 N to 1 1/2 N     | 1/2 N to 1 1/2 P | 1/2 N to 1 1/2 P                    | 1/2 to 1 1/2     |                  |                 |
| Chevrolet... 8-1100, 1300, 1500, 1700                  | 6-3 1/2 x 2 1/2 | 135                                      | AC-14              | 31                                   | 46              | Hyd               | Hyd                              | .019             | 32                      | .036          | 5B                   | 7 11"                   | 1/2 N to 1 1/2 N     | 0 to 1P          | 0 to 1P                             | 0 to 1 1/2       |                  |                 |
| ..... 8-1200, 1400, 1600, 1800                         | 8-3 1/2 x 3 1/2 | 170                                      | AC-14              | 46                                   | 46              | Hyd               | Hyd                              | .019             | 30                      | .036          | 4B                   | 7 11"                   | 1/2 N to 1 1/2 N     | 0 to 1P          | 0 to 1P                             | 0 to 1 1/2       |                  |                 |
| ..... 8-1200, 1400, 1600, 1800 (Engine Option)         | 8-4 1/2 x 3 1/2 | 250                                      | AC-14              | 46                                   | 46              | Hyd               | Hyd                              | .019             | 30                      | .036          | 5B                   | 7 11"                   | 1/2 P to 2 1/2 P     | 0 to 1P          | 0 to 1P                             | 0 to 1 1/2       |                  |                 |
| Corvair... 8-500, 700                                  | 6-3 1/2 x 2 1/2 | 80                                       | AC-14              | 46                                   |                 |                   |                                  |                  |                         |               |                      |                         |                      |                  |                                     |                  |                  |                 |

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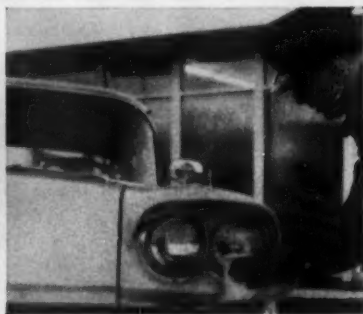
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## ROCHESTER CARBURETORS

# 6 Ways to extra headlamp profits in 5 minutes... day or night!



**REPLACE BURNOUT AND MATE.** When one 4002 goes, chances are the other's just about had it, too. Why wait? Save your customer time, trouble and inconvenience. Suggest that he replace 'em both. You'll double your profit.



**LOOK FOR CRACKED LENSES AND BURN-OUTS.** When you're cleaning lenses, check for cracked or broken ones. While you're at it, have the driver flick on his lights, high and low, to spot burnouts. You'll save him trouble on the road... and increase your profit.



**REPLACE OBSOLETE 7" HEADLAMPS.** All 5000 series headlamps are obsolete. New 6000 series Vision-Aid Headlamps with Spotlight Low Beams vastly improve in-traffic visibility. More powerful high beams make open road driving safer and easier, too.



**RACK UP EXTRA SALES.** Check headlamps before you start that lube job. Replace 'em when the car's on the rack. It takes only minutes to install a pair of Vision-Aid Headlamps. You'll add extra profit, too.



**CONVERT "COURTESY" CUSTOMERS.** Whenever a transient stops—for a road map, directions or comfort—take a look at his headlamps. When you spot burnouts, cracked lenses, or obsolete 7" lamps, sell him a pair of Vision-Aid Headlamps, and boost your profit.



**AIM FOR SAFETY AND PROFIT.** Everytime you replace a headlamp, sell a complete aiming job to match the beams accurately. Extra service brings extra profit.



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- **REPAIR KITS**—all the parts generally needed to restore peak operating efficiency.
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- **COMPLETE ASSEMBLIES**—full unit for immediate restoration of original equipment performance.

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Ask your dealer for copies of the Delco Moraine power brake service manuals. They will help you perform all repairs surely and efficiently, as recommended by the original manufacturer.

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Division of General Motors, Dayton, Ohio



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76

## **Tool For Push-Pull Work on Panels**

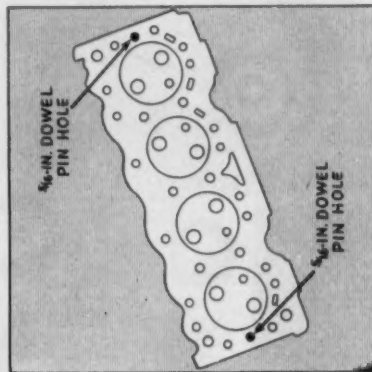
*Harry J. Miller, 991 Forty-Second St., Sarasota, Fla.*



**57.** For push-pull work on about any kind of panel, hood fittings and front end linings, this tool does a fast job. It's made from two bumper jacks fitted onto a  $\frac{3}{4}$  inch shaft 4 feet long abstracted from the steering out of a '49 Chevy. When extra pull is required, slip a piece of pipe over the shaft to provide the added leverage.

## **Easy Way To Install A Cylinder Head On V-8 Chevy**

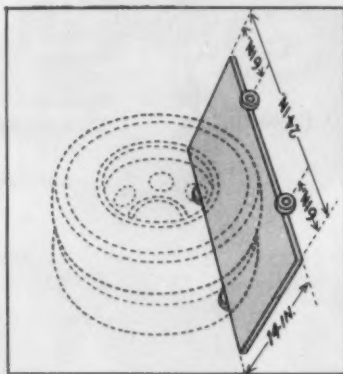
*C. J. Cornell, Wilkerson Garage, Greenwood, La.*



**59.** Here's how to save  $1\frac{1}{2}$  hours labor on installing cylinder head on V-8 Chevrolet. By enlarging  $\frac{3}{16}$  in. holes in cylinder head to  $\frac{3}{8}$  in. the cylinder head can be installed without removal of intake manifold. Intake manifold gasket can then be installed without disturbing intake manifold.

## **Homemade Dolly For Removing Dual Wheels**

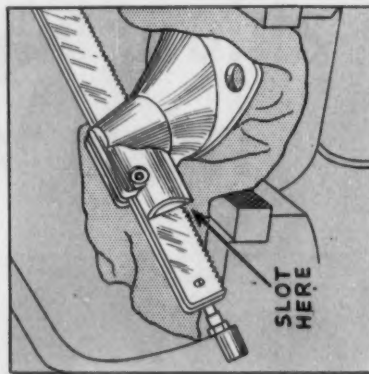
*Carl Strayer, 505 West Wilton, Norton, Kan.*



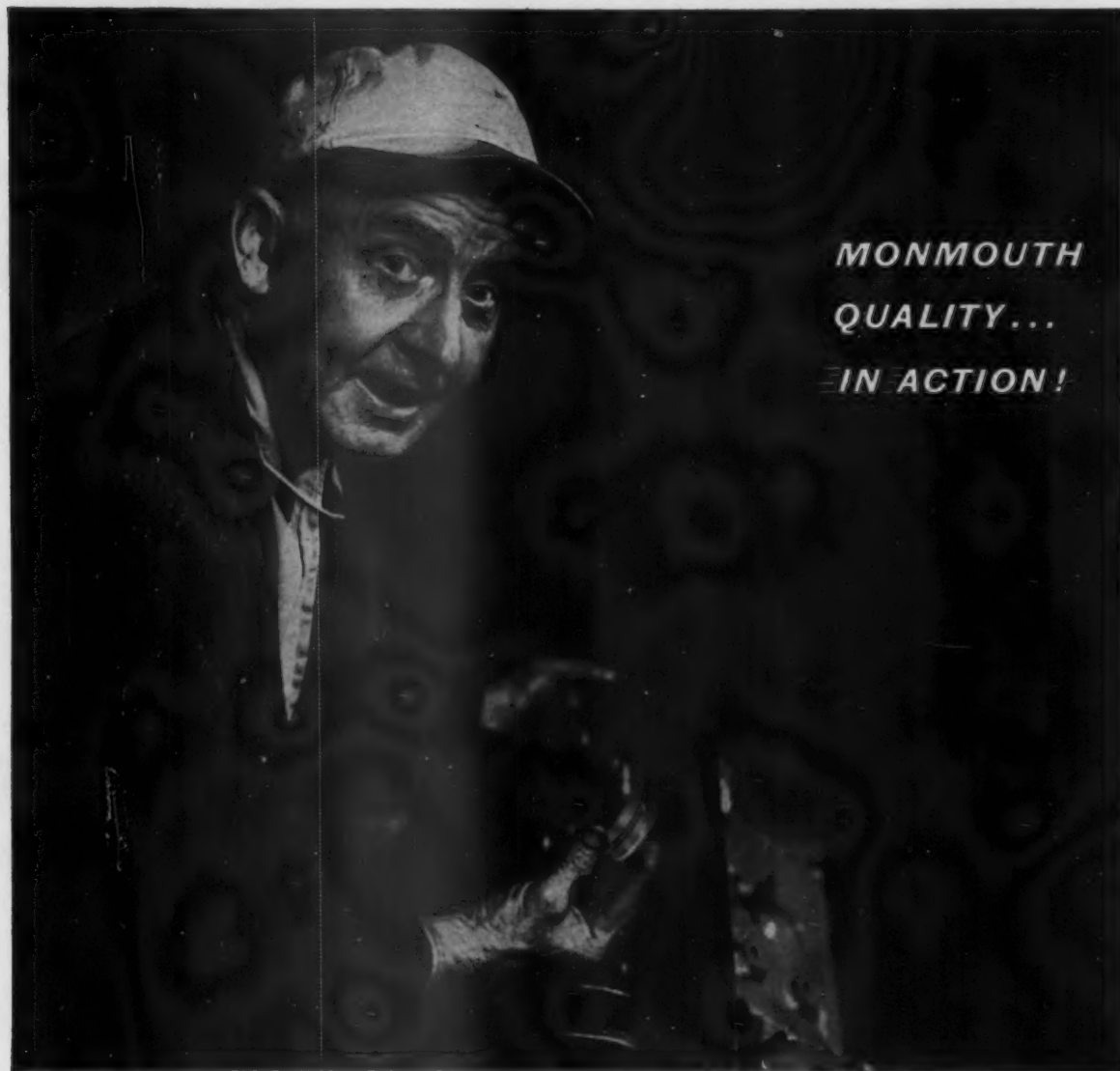
**58.** I have made a dolly to remove dual wheels from trucks. I use an angle iron for the frame and weld a piece of sheet metal in for the bottom. I used some discarded rollers from an overhead door. Jack the truck up. Roll the dolly under the wheels and let down just so you can remove the axle nuts and the wheels will roll off easily.

## **How To Fix Sun Visors That Slip Down**

*Robert L. Taylor, 1115 Swope Drive, Independence, Mo.*



**60.** If sun visors slip down and tightening the set screws on the visor pivot will not correct the situation then follow this procedure. Remove sun visor pivot. Remove the set screw in pivot and pull out the visor pivot in a vise. Put two thin blades or one thick blade on the hacksaw. Cut in the visor pivot. Be sure not to cut thru more than one-half the metal thickness. Clean off any burrs. Reassemble and install.



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QUALITY...  
IN ACTION!**

## **"Monmouth has always meant quality..."**

... and in actual performance, this quality really pays off. I know because I always used them in my own stock cars that I raced. As a garage owner and engine rebuilder for 28 years, I've long since learned to rely on Monmouth for top quality engine bearings. What's more, my NAPA jobber makes it easy for me to use the best. He carries the complete line and gives me fast service."

If you want "performance that pays off," use Monmouth Bearings in all of your engine rebuilds. Your nearby NAPA jobber can give you instant service on your complete bearing requirements.

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### **MONMOUTH Engine Bearings**

**CLEVITE SERVICE:** Cleveland Graphite Bronze • Division of Clevite Corporation • Cleveland 3, Ohio

says Clifton L. Taylor, independent  
garage owner of Delmar, Delaware



speed just as does the accelerator of a gasoline powered car. The drive is direct from the motor to reduction gears and rear axle. The old-fashioned horseless carriages were operated by stick control.

The car is powered by heavy-duty batteries. Henney engineers found by tests that a number of small batteries were more efficient than a few large ones. The Kilowatt is powered by 36 two-volt batteries, 18 under the front hood and 18 in the rear. In addition there are 12 volts for lighting and for operating the turn signals and windshield wipers. The

top speed of the Kilowatt is 35 miles per hour.

Range is flexible. About 40 miles a day if run constantly and 50 to 60 miles a day if operated at moderate speed with frequent stops. The batteries regenerate to some extent during stops of 15 minutes or longer. They can be fully recharged overnight by plugging into any 110-volt or 220-volt outlet. Built-in rechargers will be standard on the Kilowatt. A silicon rectifier will convert the alternating current into direct current, which operates the convert the alternating current into

direct current, which operates the large frame-size traction motor.

The life expectancy of the batteries is more than two years with good care. The motor should last perhaps up to thirty years, with occasional changes of brushes it was stated. The electric car will be economical to operate because there are fewer reciprocating parts to wear out. Maintenance consists of keeping the batteries filled and lubricating nine chassis grease fittings.

On the dashboard there are three instruments. They are the speedometer, a voltmeter and an ammeter. The switch that controls forward and reverse is in the center of the dash. The weight of the Kilowatt is 2,245 pounds. Its overall length is 155 inches, width 60 inches, height 57 inches and wheelbase 89 inches. Brakes, steering, suspension and other features are standard for Dauphine.

Another electric runabout is expected to be launched soon. This car will be built by Nu-Way Industries, Inc., Lansing, Michigan. Being electric it is intended primarily for city driving. It will have a moderate top speed and a crusing radius of 75 to 80 miles.

The car will have an all-fiberglass body with a choice of removable  
*Continued on page 85*

## TORQUE WRENCHES



### **This Mark<sup>®</sup> Guarantees:**

1. Guaranteed accurate forever within 2% of maximum scale reading.
2. The only wrench that permits accurate use of adapter & extensions. Patented pivoted handle permits concentrated load position—the only way to obtain accuracy with adapters and extensions.
3. Rugged construction. Can be stored in a tool box with other tools.
4. Easy to use as any socket wrench.
5. Signalling models and direct reading styles to choose from.
6. A complete range to choose from to meet every service application.

\*These are the same torque wrenches used and recommended by leading engine and equipment builders.



**Valve and Clutch Spring Tester**

Test new as well as used springs. Match sets of valve springs for top engine performance. Check clutch springs to prolong clutch life.

### **FREE**

Torque Specification Book for over 130 makes and more than 1200 models of automobiles, (U.S. and foreign) trucks, tractors, outboards, motorcycles, diesel, aircraft, marine and small air cooled engines. Spark plug, wheel bearing, valve spring data and many helpful torque tips sent free upon request, write Dept. 615



**TORQUE WRENCH**  
ADDISON • ILLINOIS

## **Manuals Page . . . .**

*Continued from page 66*

temperature brakes with "moderate duty" fluids can fail. SAE specifications for moderate duty fluids sets the minimum boiling point at 235°. For heavy duty fluids, the minimum is 300°.

Hydraulic brake systems fail when the fluid begins to turn to gas as it boils. Even a small amount of gas in a brake system can act as a "cushion" to prevent transmission of pressure from foot to brake shoe. Failure is generally total.

On a hot day, brakes may fail between traffic lights after heavy stop-and-go driving. During the time between brake applications, heat is transferred from brake drum to fluid, causing boiling and failure without warning. When the brakes cool down they return to normal. Don't gamble, use approved brake fluid.



Sealed Power has *Stainless Steel*  
...the very best oil ring metal ever used!

STAINLESS STEEL OIL RING, U. S. PAT. NO. 2,799,872



Preferred Performance

- \* Stainless steel resists corrosion—makes it virtually impossible for troublesome sludge and carbon deposits to build up. Overcomes oil ring plugging—oil pumping.
- \* Stainless steel maintains its original, built-in tension indefinitely so it delivers better oil control far longer than ordinary rings.

The high number of spring tension points assures oil control in

tapered and out-of-round bores.

Side seals in groove—stops oil going around back of ring—no smoking.

End-abutment design produces ring tension independently of contact with bottom of piston groove—eliminates groove depth problems.

Chrome-plated, factory-seated side rails give instant oil control. Sealed Power Corporation, Muskegon, Michigan.

# Sealed Power

**KROMEX**  
**PISTON RING SETS**

PISTONS • • PINS • • SLEEVES AND SLEEVE ASSEMBLIES • • VALVES • • WATER PUMPS • • TAPPETS





# RMC HEAT BANDS *Triple* \* VALVE LIFE

**RMC HEAT BAND  
68,000 MILES**

Note good condition of RMC Heat Band around margin and seat even though surface of head is badly eroded.



**NON-BANDED VALVE  
20,000 MILES**

Note Failure caused by seat burning. Compare with illustration above. RMC Heat Band prevented this type of failure.

## THE SOLID STEM REPLACEMENT FOR SODIUM COOLED VALVES

RMC "Heat Banded" Valves of Bi-Metal (2 piece) construction feature Stellite faces with a Stellite band fused around the outer edge of their Austenitic (non-magnetic) steel heads. Stem diameters match sodium cooled Valves—need no special guides or installation—give maximum heat dissipation—will not seize or bind.

### LOWER COST—BETTER PERFORMANCE

Heat Bands cost less than sodium Valves. Yet, they give greater performance. A trial will show you.

\* Actual results achieved in a Reo Gold Comet Engine by Goethols Automotive Supply, Inc., Grand Rapids, Michigan.

### COMPLETE COVERAGE VALVE TRAIN PARTS

|               |               |
|---------------|---------------|
| VALVE SPRINGS | ROTATOR VALVE |
| VALVE LOCKS   | KITS          |
| VALVE GUIDES  | VALVE SPRING  |
| VALVE SEATS   | INSERTS       |

Warehoused in all principal cities. Sold by leading Replacement Parts Wholesalers everywhere.

**RICH** FOR INFORMATION WRITE TO  
MANUFACTURING CORP.  
BATTLE CREEK, MICH.

## Merchandising Ideas . . . . . Continued from page 47

for this expert care and attention is YOUR place. Promotions and advertising will continually remind customers and prospects that they need this specialized service and that your shop is equipped to provide it.

Unusual promotions gets the prospect interested enough to stop by the get the job done. At the shop, point-of-sale merchandising, including signs and displays will attract the interest of the customer they may lead to additional sales and services. Once the prospect is in the shop or service station the real selling job falls to the personnel. The amount of extra business a shop gets within the next few months depends on how well it promotes and sells for summer.

To offer Summer Specials you must have basic equipment to carry out these services. Have an adequate inventory of parts, and merchandise on hand. Be prepared for the "extra" business that your promotions will bring.

Here are some of the equipment that you will need to offer expert summer service. Basic equipment should include an oscilloscope, dynamometer, compression gage, vacuum gage, combustion analyzer, timing light, regulator tester, distributor test bench, spark plug cleaner and tester and a battery charger.

For front-end work you should have a wheel balancer, tire truer and aligning equipment. Offer profitable cooling system service will bring in many new customers. These cars need a radiator flush and a checkup of hose, fan belts and other items for safe summer driving. To offer cooling system service you should have on hand a reverse flusher, flow tester and thermostat tester.

Aside from the usual spring changeover jobs, the shop should continue to promote its other regular services. Look each car over thoroughly. Try to sell the prospect on body work, paint jobs, glass replacement, wash and polish, shock absorber replacements and any other service which the condition of the car indicates.

General merchandise such as accessories, radiator sealers, rust inhibitors, tires and lubricants are best sold when they can be easily seen by the customers. Be sure that they are properly and conspicuously displayed.

Here's some other money-making checks to make on each car when it pulls in. Check air pressure of tires. If they are worn or damaged advise new ones. Also see if they have been rotated for even wear. If not, sell this tire-saving service. During the hot summer months it is important that the brakes and brake fluid are checked. This check-up may bring you a profitable brake job IF you check them.

You can sell many head lamps and stop lights if you will spend just a minute checking these important safe-driving items. Filters, windshield wipers are other hot profit items which can be sold easily once you convince the customer of the need for replacement.

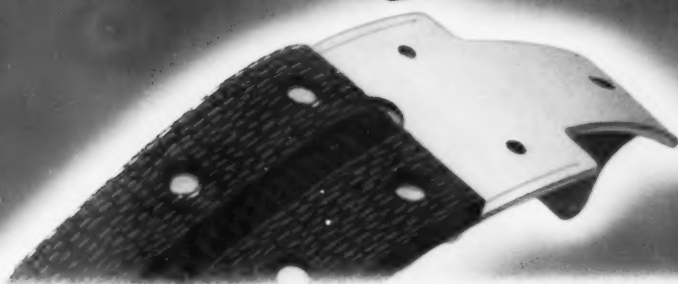
Remember, the prospects are there in your community. Tell them that your shop or service station has the proper equipment and know-how for expert car service. When they arrive give them your best in courteous treatment and quality workmanship. When a satisfied customer leaves your place he will usually refer his friends to your shop when they are in need of car repairs or service. Courtesy and good service always pays big profit dividends.



"It must be some natural instinct that drives so many of them to migrate at this time of year."

NOW FROM **Grey-Rock**

*New*



**COPPER-WOVEN**

**BRAKE  
LINING**



- DISSIPATES HEAT FASTER
- PRACTICALLY ELIMINATES FADE
- GIVES LONGER SERVICE LIFE
- TESTED UNDER MOST SEVERE CONDITIONS
- BIGGEST BRAKE LINING IMPROVEMENT IN YEARS

To help eliminate the tremendous heat developed by the smaller brakes on today's heavier cars traveling at higher speeds, Grey-Rock now has a new improved woven-molded combination Balanced Brakset for Bendix brakes in which the woven segment is made with copper wire.

Because copper is an excellent conductor, it gets rid of excessive heat at the braking surface by carrying some of the heat through the lining into the brake shoe, which helps dissipate the heat.

The new copper-woven lining is combined with an improved molded lining. Result: Grey-Rock Balanced Braksets keep their full braking power after repeated brake applications, provide longer service life.

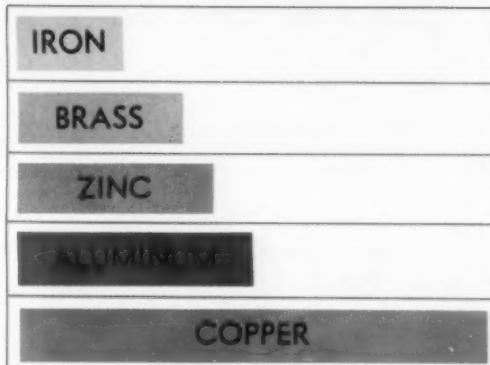
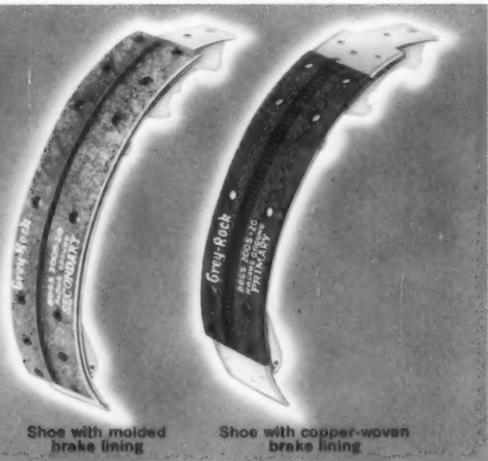


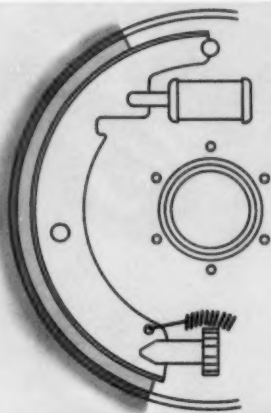
Chart shows relative speed at which common metals conduct heat. Of these, copper conducts it fastest—nearly twice as fast as aluminum, almost 5 times as fast as cast iron.

## Here's how brake-destroying heat attacks conventional linings —and why Grey-Rock Balanced Braksets with copper-woven linings operate at cooler temperatures, last longer

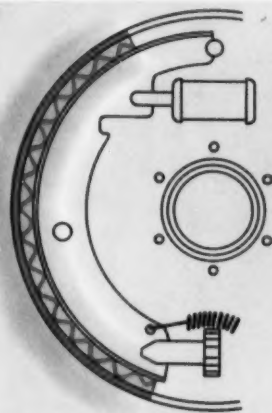


Shoe with molded brake lining

Shoe with copper-woven brake lining



Molded lining dissipates heat unevenly through drum only.



Copper-woven lining dissipates heat evenly through drum and shoe

The enemy of brake efficiency is excessive heat. Braking friction builds heat at the lining surface. Trapped heat often can't be dissipated fast enough in conventional linings to prevent fade and rapid wear.

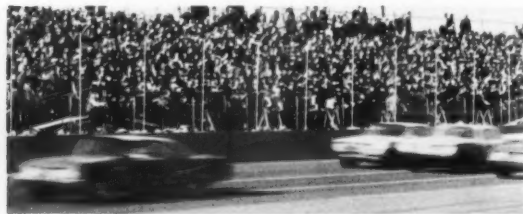
Copper wire in the new, improved Grey-Rock woven lining

### New linings outstanding in tests from coast to coast!

In dramatic proof of their unusual durability and low fade characteristics, Grey-Rock's new woven-molded combination linings have successfully passed the test in hundreds of problem cases all over the country.

#### Examples:

The fast-driving owner of a heavy car couldn't get more than 4000 miles out of any set of lining. Grey-Rock's new Copper-Woven-Molded combination was installed and was still in excellent condition after 6000 miles of the same hard driving.



conducts a large portion of the heat down into the brake shoe. Drum and shoe act as heat reservoirs . . . both dissipate the heat. Result: brakes run cooler even under the most severe braking conditions, reducing fade and preventing excessive wear.

State police cars patrolling high-speed areas report excellent results with the new linings.

Leading NASCAR drivers have used the new Grey-Rock combination in fast stock car competition with complete satisfaction.

Hundreds of cars have proved in thousands of punishing miles the astonishing ability of Grey-Rock Copper-Woven-Molded Balanced Braksets to deliver faster, surer, safer stops . . . and do it longer.

### Grey-Rock keeps you out in front!

The new Copper-Woven-Molded combinations are another example of how Grey-Rock gives you the edge over competition. Grey-Rock research and brake lining development mean more satisfied customers, more sales, and more profits for you.

Use these new, improved linings and Grey-Rock's complete merchandising plan, plus the big new consumer advertising program, to push your brake service sales and profits to a new high. Grey-Rock Division of Raybestos-Manhattan, Inc., Manheim, Pa.

**Only Grey-Rock makes BALANCED BRAKSET LININGS**

BALANCED BRAKSETS • TRUCKSETS • BRAKE BLOCKS • VEE-LOK® CLUTCH FACINGS • AUTOMATIC TRANSMISSION PARTS

*You Can't Buy a Better Brake Lining to Save Your <sup>customer's</sup> Life*

## NEW LITERATURE DESCRIPTIONS

### Power Steering Handbook

*Features tips on power steering work*

**The Imperial Brass Mfg. Co.:** A new 24-page booklet which features information on power steering line work is now available. Other sections provide up-to-date tips on handling gas, oil and brake line work along with some helpful pointers on working with tubing. In 6 pages the book tells what power steering trouble to watch for; gives 4 checks that help spot trouble; and, provides step-by-step instructions on how to handle a steering line change. Also contains a chart which presents solutions to the nine most common power steering complaints. Write: *The Imperial Brass Mfg. Co., 6300 West Howard St., Chicago 48, Ill.*

### Specifications Manual

*A handy guide to auto lamps*

**Westinghouse:** A new replacement specifications manual which indicates the types of automotive light bulbs used in each of the various makes of automobiles from 1946 through 1960 has been released. The new guide also lists the various types of bulbs used in trucks, buses and foreign cars. A thumb index system makes it simple for the dealer or mechanic to locate the bulb specifications for the particular model with which he is concerned. It also contains a cross reference table for principal types of foreign lamps. Write: *Westinghouse, Lamp Div., Bloomfield, N.J.*

### Wall Chart

*Gives information on tubeless tire valves*

**The Dill Mfg. Co.:** A new 1960 tubeless tire valve wall chart, has

just been published. The free chart lists 67 models of 18 major American cars, with their corresponding wheel size; tire size; manufacturers' recommended tire pressures, both front and rear; plus complete recommended valve information both for 1960 models as well as earlier

model cars. It also gives comparable information for 28 models of 12 popular foreign make cars. Important tire maintenance hints are also included as are pictures and designations of various sizes and types of valves which are used for replacement. Write: *Dill Mfg. Co., 700 E. 82nd St., Cleveland 3, Ohio.*

**If you make a right turn from a left hand lane, you are probably just careless and reckless and not what the driver behind called you.**



here's the secret to accurate  
**factory approved valve seat grinding!**

This exclusive eccentric grinding method is faster, too—beats job rates, makes more money. Hall-Toledo's Model EJ services all automotive engines with jewel-like efficiency and handles seats up to three inches in diameter.

Because of its patented eccentric grinding principle, the Model EJ is the most accurate, yet the easiest to use seat grinder available. It costs less to operate, too, because grinding wheels and pilots last longer. Ask your jobber or write direct.

write for  
the complete  
story of  
eccentric  
grinding

Please send information on the items checked. No obligation.

☐ Valve seat grinders for Automotive, Diesel and Aircraft engines. ☐ Valve Guide Reamer and Seat Inserters. ☐ Expanding Pilots, Grinding Wheels ☐ Cylinder Hones.

Name

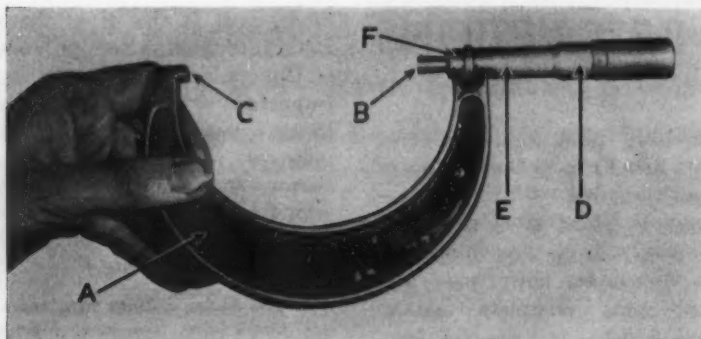
Street

City  Zone  State

**HALL  
TOLEDO**

**TOLEDO 9, OHIO**





## Micrometer . . . . .

*Continued from page 53*

At immediate left: Nomenclature of micrometer. A is frame; B, spindle; C, anvil; D, thimble; E, sleeve; and F, the lock.

tion lines 40 to the inch, corresponding to the number of threads on the spindle. Each vertical line then would correspond to 0.25 thousandths of an inch or  $\frac{1}{40}$ th of an inch. Each fourth line on the sleeve is made higher than the others and carries a number starting at zero (0) and continuing to nine (9).

Each numbered line would then indicate four times  $\frac{1}{40}$ th of an inch or  $\frac{1}{10}$  (.100"). The sleeve has a horizontal line running its full length intersecting all of the vertical lines. This is the base line from which final thimble to sleeve readings are interpreted.

The thimble has 25 horizontal calibrations numbered from zero (0) to twenty-five (25). Each graduation indicates one thousandths of an inch. Rotation of the thimble graduations from one line to the next, moves the spindle longitudinally  $\frac{1}{25}$ th of 25 thousandths or one thousandths (.001") of an inch. Therefore, rotating the thimble so 25 graduations would pass the base line on the sleeve (one complete turn) would then indicate spindle travelled twenty-five thousandths of an inch. This would move the thimble along the sleeve one vertical graduation.

### Taking a Reading

To read the micrometer, simply multiply the number of vertical lines visible on the sleeve by 25. Then add the number of graduations on the thimble from 0 to the line that meets the base line on the sleeve. Observe the two sketches in the illustrations on page 52. Sketch A shows the thimble backed out on the sleeve exposing 22 sleeve graduations. The 15th line on the thimble aligns with the base horizontal line on the sleeve. Multiplying the 22 sleeve graduations by .025" gives .550"—Add the 15 graduations from the thimble (.015" or fifteen thousandths) to the .550"—the total then would be .565 thousandths of an inch.

*...better looking!*

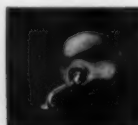
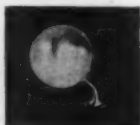
**LUCAS FENDER MIRRORS**

### Better selling too!

Today, these fine quality, British-made favorites are found on almost any make car. They're so popular because of their sharper viewing, smarter styling and heavily coated chrome finish.

Get your share of Lucas' growing sales in America. Profit with Lucas' complete line of accessories and replacement parts. Lucas . . . original equipment for most British cars. Write for details now!

- CONVEX OR PLAIN GLASS
- SHOCK RESISTANT
- FLEXIBLE ADJUSTMENT



Right from  
the start . . .  
Right for  
replacement!

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**LUCAS ELECTRICAL SERVICES, INC.**

501-509 W. 42nd Street, New York 36, N. Y.  
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GENERATORS • STARTERS • DISTRIBUTORS • COILS  
BATTERIES • LAMPS • WINDSHIELD WIPERS • REGULATORS  
HORNS • GIRLING BRAKES AND SHOCK ABSORBERS

## Electric Car . . . . . Continued from page 78

tops. It has an overall length of 148-in., width of 62-in., and is mounted at the start on a conventional steel chassis frame. Eventually the company plans to use an aluminum frame. The car at present weighs about 2,100 lb.

Housed in the rear compartment are six 12-volt batteries with a built-in charger that will operate on either 110 or 220 volt current supply. Two DC motors, housed in the rear compartment are connected to the rear axle, one on each side. An advanced feature is now under development. It is a new electronic control. This control is said to make possible acceleration from zero to 45-miles per hour without pause or halting. The car does not require a differential or transmission. Merely a two-position switch for forward and reverse.

Brakes and steering are conventional. The suspension consists of coil springs at the front, leaf springs at the rear. The company has been working with one of the major electric manufacturers on the development of a compact, printed circuit electric motor. If this works out they will use this type of motor after the start of production.

In England, the TEL, an all-electric car has been developed. It is essentially a town and suburban short range car. It can travel 35 to 40 miles at a speed of 35-40 miles per hour. According to its manufacturer, the range of the car does not matter. The car can be plugged in at any domestic power point whenever it is stationary.

This British electric car has a three speed foot pedal with a brake pedal in the usual position alongside. There is no gear lever. It has a plastic body and, if necessary, may be left outside in any weather all the year round.

The car is very light in weight. This has been made possible by use of a light-weight battery pack, together with a specially designed motor and a new type switching and rectifier charger on the car, all of which are extremely light-weight.

The car has been developed by Traction Electric, Limited, located near Canterbury, England. The company also plans to eventually

cover taxi services as well as light delivery trucks.

Electric cars may eventually be very common on our crowded highways. There may be many families in suburban areas who will be using them as a second car. Housewives may drive them on short trips to the shopping center. They can easily transport their children to and from schools in the electric cars. Many people who live 5 or 10 miles from their place of business may find that the electric cars will afford them easy and cheap transportation.

Renewed interest has also developed in electric trucks. They would be especially good for milk and bread delivery routes. Here economy of operation would be very important. In an electric truck the demand on the battery occurs only when the vehicle is moving. It is, therefore very suitable for urban delivery of these items.

At the moment the principal hindrance to an immediate general acceptance is the limitation of the battery. Improvements in weight and capacity of the battery are needed. When these improvements are made then the future of the electric car may be very bright indeed.



### with **WEATHERHEAD'S NEW FUEL-LINE MAKE-UP KIT** for ALL late model cars

Replacement of faulty fuel lines can be profitable—provided a big inventory of seldom-used assemblies doesn't soak up all your margin.

Here's a kit that takes care of all that. No assemblies. This new Weatherhead FL-85 Kit consists of just twenty-five feet of  $\frac{3}{16}$ " hose, ten feet of  $\frac{1}{4}$ " hose and an assortment of a total of thirty-nine ends and clamps for the two hose sizes. You pay only for the contents. The sturdy dual-purpose counter display and handy dispenser is free.

With this low-cost minimum-inventory kit (dollars less than anything else available) you can make up your own assemblies to handle fuel-line repairs on

all late model cars. Your profit is \$8.23 on the parts alone—and your labor charges for this simple, quick job can double that figure easily.

You can't afford to be without this high-profit, low-ticket FL-85 kit—the most complete, yet simplest and fastest moving one on the market. Order one from your Weatherhead jobber today, and cash in on this extra-profit work.

#### AND FOR OLDER CARS

The BL-13 Barliner Kit handles most all low-pressure fuel, oil and air line replacements. Still available from your Weatherhead jobber.



**NEW B&D AIR COOLED 1/4" HEAVY DUTY SHORTY GIVES A GUY A BREAK!**



Starts into the toughest spots!

Ends knuckle busting stiff necks, sore muscles

Black & Decker

## Cut costs, speed work with B&D accessories



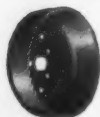
### B&D Drill Stands

convert your portable Black & Decker Drill into a drill press for heavy-duty work. Available in all sizes.



### Rugged Wire Brushes

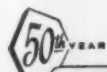
remove scale and rust, old paint; clean castings and structural metal when attached to your B&D Drill. Available in cup and wheel types.



### High-Speed Hole Saw

cuts clean, round holes powered by your B&D Drill. Other accessories

stocked by your B&D distributor include mandrels, right angle attachments, bits, arbors, specialized chucks. Call him today.



INSIST ON THE BEST

**Black & Decker**

ACCESSORIES DESIGNED FOR THE TOOL

# Engineering Highlights



by Joseph Geschelin  
Engineering Editor

**S**MOG is a problem that has plagued the Los Angeles basin for a long time. The Air Pollution Control agencies of California have been working on the problem for quite some time. They have established some maximum numbers for the value of motor vehicle exhaust emissions that are considered tolerable. These numbers as required by the State of California are: 1 1/4 per cent carbon monoxide; 275 parts per million hydrocarbons (Hexane equivalent).

The automobile manufacturers in a cooperative research and engineering program, along with several independent organizations, have been working on catalytic type mufflers.

And a number of companies have been working with direct-flame type

afterburners. More recently, the Automobile Manufacturers Association announced that American motor vehicle manufacturers will offer for sale in California, not later than the time of introduction of 1961 models, a crankcase ventilation package. This package will redirect all crankcase emissions to the intake of the engine for burning. The latter device does not have any effect on the level of emissions from the exhaust system.

This article is concerned with a specific project—the development of a commercially feasible afterburner conceived by the Staff Automotive Development Laboratories of Thompson-Ramo-Wooldridge, Inc. It is based on preliminary investigations conducted by the Ramo-Wooldridge Division of TRW. This project, under way for some time, has been conducted co-operatively with the Chrysler Corporation; it is part of an industry program of research and development.

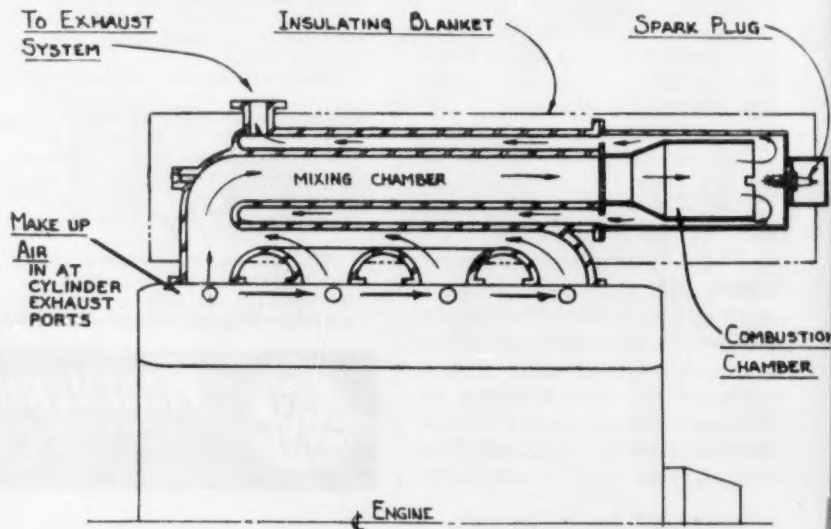
Dynamometer work in the Cleveland Laboratories has been conducted with Plymouth V-8 engines. Adaptation to a conventional passenger car and testing on the road has been conducted by Chrysler.

All of the work so far has been done with prototype equipment. From now on the effort will be directed at refinements and simplification in the interest of space and cost economy.

The basic design principle embodied in the Thompson-Ramo-Wooldridge afterburner is outlined in the schematic sketch. Backbone

*Continued on page 92*

Diagram of Thompson-Ramo-Wooldridge Afterburner



# NEW B&D AIR COOLED $\frac{1}{4}$ " HEAVY DUTY SHORTY GIVES A GUY A BREAK!



Gets into  
the tightest  
spots!

Ends knuckle busting  
... stiff necks  
... sore muscles

Ever try pulling a bad core plug? Or blind drilling a bumper bracket? Then, brother, the new Black & Decker  $\frac{1}{4}$ " Heavy-Duty Shorty Drill is *your* kind of tool! It's so compact it goes just about any place your hand goes... gives you finger room even on flush jobs, too.

And cool! This drill has *two* fans for drilling comfort! If you're sick and tired of hot-handling tools... want to save on tape and liniment... get 60% more power for 32% less money than ever before... mail coupon right away. Your jobber will be out to demonstrate.

It's yours for as little as 14c a day!



## Black & Decker

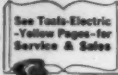
QUALITY ELECTRIC TOOLS



Hard to reach spots are duck soup for a B&D Shorty.



Try it in the maze of tail pipe, shocks and springs.



THE BLACK & DECKER MFG. CO., Dept. 5106  
Towson 4, Maryland. (In Canada: Brockville, Ont.)

- ☐ Please arrange a demonstration of  $\frac{1}{4}$ " Shorty.  
☐ Please send additional information on \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

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☐ Valve  
Refocers



☐ Drills



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LOCKHEED BRAKE PARTS, FLUID, BRAKE LINING AND LINED BRAKE SHOES • AIR HORNS

# best selling brake fluid in a sized, re-usable container!



Simple to store (they stack neatly) and made of sturdy steel, these convenient containers are colored a brilliant, wide-awake red. They can be used to hold other liquids when you've drained the last drop of Lockheed® Brake Fluid from them. Just clean them properly, remove the paper label, and they're ready for duty in trucks, cars, boats and backyards . . . any place you need a handy, hardy carrier for gasoline, kerosene, oil, or water. (A flexible spout stored inside each can makes pouring a neat-as-a-pin proposition.)

You'll empty them in jig-time, too, for Wagner Lockheed is the world's largest selling, fastest selling quality brake fluid. And rightfully so, for it is chemically balanced to operate under high temperatures or in sub-zero weather. It provides proper lubrication for all parts of the brake system; absorbs moisture to prevent rust or corrosion; doesn't cause rubber parts to swell. You'll protect brake systems,

Available now...a new addition to the family of Wagner® Lockheed Brake Fluid containers...the 2½ gallon can, which can be used for other liquids when emptied.

## REUSABLE CONTAINER



and the lives of your customers, when you refill with Wagner Lockheed.

By the way . . . the cans are a \$2.50 value. You get them for a fraction of that. So, next time you order brake fluid, specify Wagner Lockheed Heavy-Duty or Super Heavy-Duty 21B Brake Fluid in the 2½ gallon container.

**Wagner Electric Corporation**

6498 PLYMOUTH AVENUE, ST. LOUIS 33, MISSOURI

**Wagner® Lockheed**  
*... the best known name in brake service*

WF60-7

AIR BRAKES • TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

## New Products . . . . . Continued from page 63

ward, backward, to right and to left. It is both fully rotating and capable of sideways adjustment the company states. Write: Weaver Mfg. Co., 2177-79 South 9th St., Springfield, Ill.

### Anti-Seize Compound

*Solves service problems posed by trend to aluminum engines*

**Permatex Company, Inc.:** Company claims that a coating of its Anti-Seize Compound on bolt and stud threads insures smooth assembly, accurate torquing, and "no-strain" disassembly of automotive components subjected to high temperatures and pressures. It is useful for applications ranging from lubrication of head bolts to providing a pressure-tight seal for spark plugs. It can also be used, company

states, when assembling engines and transmissions having aluminum components. Write: D. C. Adams, Permatex Co., Inc., 300 Broadway, Huntington Station, L.I., N.Y. or phone HA 1-3800.

### Rust Solvent

*Rust solvent and penetrant in pressurized container*

**Spray Products Corporation:** Announced is the development of a new penetrant and rust solvent. Called, Spray Nuts Off, it is said to be a combination of oils, penetrants and rust solvents, chemically formulated to provide fast solvent and penetrating properties. It is said to be excellent for cleaning small parts, spark plugs, battery terminals and carburetors. It will loosen stud bolts in aluminum heads and will

free corroded tail pipes and mufflers. Write: Miles Powell,



V.P., Spray Products Corporation, P.O. Box 1988, Camden 1, N.J. or phone NOrmandy 3-7040.

### Magnetic Inspection Materials

*Available in pressurized spray cans & plastic bottles*

**Magnaflux Corporation:** Magnetic inspection materials are available in pressurized spray cans and plastic squeeze bottles. These materials can be used with

*Continued on page 93*

## Now! Faster Edging of AUTO GLASS

Plus 60% Increase  
In Belt Life . . .

Sensational new Contact Rubber Roller Platen gives you longer belt life and faster edging without chipping.

**SOMACA 106-FB12RP WET ABRASIVE BELT MACHINE** with New CONTACT RUBBER ROLLER PLATEN

Standard of the Glass Shop Trade—Several Thousand in Operation

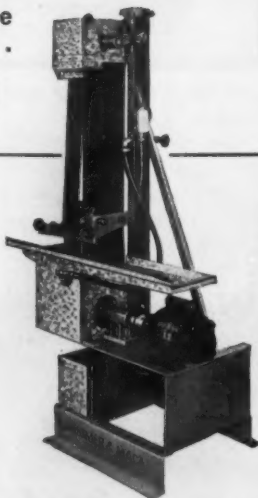
The flexing or fingering action of "cog-type" serrations in the rubber roller constantly present fresh, sharp cutting surfaces which gives the abrasive an aggressive cutting action. All this on the ever popular Somaca Wet Abrasive Belt Machines makes a combination hard to beat.

Write for full information and prices . . .

**SOMMER & MACA Glass Machinery Co.**

Automotive Department

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DRIVES IT TOO!**

**QUICK-WEDGE  
SCREW-HOLDING  
SCREWDRIVER**

2" to 14" blades, 4 bit sizes.  
Available with shockproof plastic covered tubing.

**Ask For It At Your Dealer**  
KEDMAN CO., 233 S. 5th W., Salt Lake City, Ut.



**SIoux**

**BIG BUY IN  
R WRENCHES**

Test the SIoux Air Impact Wrench against any other before you buy. In each price range SIoux delivers more torque per dollar—up to 25% more, while consuming 30% less air! Call your nearest SIoux distributor for a demonstration!

**ALBERTSON & CO., INC. • SIoux CITY, IOWA, U.S.A.**

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filled with  
new business

*American  
Brakeblok.*



When you sell American Brakeblok lining, it stays sold. Your customers come back to buy again, not to complain and fill your shop with jobs that have to be done over. Riveted or bonded—through your NAPA jobber.

P.O. BOX 21, BIRMINGHAM, MICHIGAN  
DIVISION OF AMERICAN BRAKE SHOE CO.

# AMERICAN BRAKEBLOK

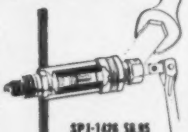


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## Do 11 Jobs *Fast!*

**RATCHETING SPARK PLUG SOCKET.** Replaces three tools. Makes possible torquing of plugs in accessory-packed cars.



SPJ-1426 \$8.95

**FILLER PLUG WRENCH.** Speeds, eases removal of Ford and Mercury differential hex filler plug.



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**TWO-IN-ONE SOCKET.** Step-down opening services both stop light and oil pressure light switches. Will not break switch seal.



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**CHRYSLER EMERGENCY BRAKE ADJUSTMENT WRENCH.** Only tool needed for internal emergency brake adjustment on all Chrysler-make cars.



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**BENDIX BRAKE TOOL.** Both ends designed to adjust all type Bendix brakes. Extra long!



NO. 302 \$1.74

**SHOCK ABSORBER TOOL.** Three tools in one. Insures quick installation-removal of shocks on all General Motors, Ford and Chrysler-make cars.



No. 2280 \$1.95

WRITE FOR COMPLETE

CATALOG

## Herbrand Tools

HERBRAND DIVISION THE BINGHAM HERBRAND CORPORATION  
EUREKA, CALIF.

## Engr. Highlights . . .

Continued from page 86

of the device is a casting replacing the normal exhaust manifold. The exhaust mixture enters the manifold through the ports and is directed to the mixing chamber. At the same time, make-up air is introduced to the mixture to render it more combustible.

The exhaust mixture then enters the combustion chamber at the right where it is burned. The products of this combustion leave the combustion chamber through a series of tubes arranged about the mixing chamber and leave through the exhaust system.

Two afterburners are required on a V-8; one on a four- or six-cylinder engine. In the prototypes, the exhaust manifold is a casting of a modified ductile stainless steel. The remaining components, including the tubing and combustion chamber are fabricated from a Thompson Ramo Wooldridge specification stainless steel, stemming from a new valve steel analysis.

This afterburner requires certain additional accessories to make the installation work. First is an air pump for supplying low pressure air in adequate volume from admixture with the exhaust gas. The pump is arranged to provide the flow of air equally to each side on a V-8 engine.

The second accessory is a self-contained ignition system, independent of the engine ignition system. This supplies current for firing the single stainless steel spark plug in the afterburner combustion chamber. The ignition system is required to initiate combustion for starting when the engine is cold.

One of the questions that naturally arises is this: just what penalty must be paid for an afterburners installation? According to Chrysler Engineering, there is a loss of horsepower at the extreme peak of the power curve, but there is no significant performance loss in the usual operating range.

As mentioned earlier, testing has been done from every available direction: dynamometer, chassis dynamometer, road testing. Road testing, naturally, is the payoff since it provides an accurate picture of the behavior of the exhaust system under actual city driving conditions.

## BETTER



TEMP-O-MATIC  
WATER PUMPS

- Remanufactured and assembled with new seals and bearings
- Every unit pressure-tested and fan belt run.

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- The complete line with exclusive "Like-New" look
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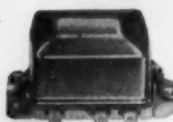
## LOWEST



BRAKE-O-MATIC  
MASTER CYLINDERS

- Every unit steel sleeved to assure perfect braking action
- Tested under actual driving conditions.

## COST



POWER-O-MATIC  
VOLTAGE REGULATORS

- Every unit completely remanufactured to precision standards
- Individually packaged in attractive, easy-open boxes.

S. A. Shenk & Company offer the most complete line of remanufactured auto parts. Units available for every make and model — not just a few. Buy the best and offer your customers greater savings with higher profits for you. Every part unconditionally guaranteed. Write for jobber nearest you.

**S. A. SHENK & CO.**  
America's Largest Remanufacturer of Auto Parts  
COLUMBUS 7, OHIO

## New Products . . . . . Continued from page 90

any of the magnetic particle inspection equipment or test kits



already in operation throughout the industry, the company states. The ready-to-use magnaflux materials eliminate previous bulky containers, and the problems of mixing to formula, or filling application devices, and reduce set-up time to inspect complex parts. Write: Franklin C. Catlin, Mgr. Marketing Development, Magnaflux Corporation, A subsidiary of General Mills, 7300 W. Lawrence Ave., Chicago 3, Ill. or phone UNDERhill 7-8000.

### Shaft Saver

*Straightens bent lawnmower crankshafts*

Little Brute Company: A new



small engine crankshaft straightener is introduced. According to the company, it is possible to straighten bent crankshafts in most verticle shaft engines used on lawnmowers today, without dismantling the engine. Write: Little Brute Company, 317 East 1st St., Monticello, Ia.

### Tube-Lighted Binder

*Makes reading and reference work easy*

Grizzly Brake Division: An all-steel overhead fluorescent tube-lighted binder is introduced. It is said to make reading and reference work simple and easy. Two name-card holders identify countermen. Measures 36 inches by 23½ inches with a capacity



of 28 one-inch section clips and two support wings. Write: Grizzly Brake Division, 700 Caroline St., Paulding, Ohio or phone: Chicago, Randolph 6-2891 or New York, Plaza 9-0980.

## Radiator Servicing Profits Now Greater Than Ever with

# NEW INLAND 1-Piece Radiator Shop



Inland's newest unit makes radiator servicing more profitable than ever. Reduces your initial cost by combining the Flo-Test Machine, Hot Cleaning Vat and Test & Repair Bench into one complete radiator department. Enables you to do the entire Testing, Cleaning and Repairing job. Compact. Saves steps.

**LESS SPACE REQUIRED!** Complete unit is only 11' 7" long, 3' 6" wide.

**LARGE CAPACITY!** Handles all car, and many truck and tractor radiators.

**VAT FEATURES!** Solution agitator speeds radiator cleaning. Automatic Timer turns heat OFF at closing time, turns it ON at any pre-determined hour so solution is hot when you arrive for

work. Even turns it off-on week ends.

**OPERATING COST IS LESS!** A full time operator is not needed. One of your present employees, in only a part of his time, will produce good additional profits with no increase in overhead.

**WE TRAIN YOUR OPERATOR!** Our free factory school quickly makes your man a professional radiator repairman.

**BIG PROFITS SERVICING RADIATORS!** Users report: "\$900 first 30 days!" (Ills.) "\$4,500 in 6 months!" (Pa.) "\$18,000 first 9 months!" (Cal.) The market is growing. Many radiators need cleaning. The hourly return is high. Inland's national advertising helps you.

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Shows equipment, prices, training course, Pays-For-Itself purchase plan and experiences of other operators.

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World's Largest Manufacturer of  
Radiator Servicing Equipment

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Please send free 32-pg. book describing new 1-Piece Radiator Shop, training school, prices, etc.

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BY \_\_\_\_\_ TITLE \_\_\_\_\_

If dealer, make of car sold \_\_\_\_\_

Are you now operating a radiator Dept.? ☐ Yes ☐ No

## New Generator . . . . . Continued from page 44

meter can also be used to make this check. Of course, in checking for grounds, your reading should be infinity.

Anything less than infinity, indicates a partial ground or full ground. In checking for opens 110 volt test lamp can be used, or an ohmmeter can be used. In this case connect a test prod from either the 110 volt test lamp or the ohmmeter to each slip ring. If the lamp fails to light the fields are open. In the case of the ohmmeter, if the reading is infinity, then the fields are open.

Your reading normally for the fields should be 1.8 ohm's. To check the field for short circuits, the proper method is to connect a battery and ammeter in series with the two slip rings. The ammeter should read 6.3 to 7 amperes at 12 volts.

Anything less indicates a short circuit, anything more would indicate high series resistance in the fields. The field windings are not serviced separately, and are a non-replaceable item. Therefore, the complete rotor assembly must be replaced. If, in checking the

rotor, everything is found in order, examine the slip rings for any indication of corrosion or roughness. It is permissible to chuck the rotor in a lathe, and take a light cut.

Remember to remove only sufficient material to bring the rings down to a smooth round finish. Finish sanding with 400 grain polishing cloth. Then blow away all the residue with comparatively low air pressure. If the slip rings have reached the stage where normal lathe repair is not feasible, then the slip ring assemblies can be replaced as a unit. After unsoldering the leads, the slip ring assemblies can be removed with a conventional puller; the new sleeve assemblies pressed on.

Make sure that your soldered connections are very secure. After assembling new slip rings the complete rotor must be chucked in the lathe, and a fine cut taken to bring the concentric reading of the rotors to within .001 inch. Then finish polishing the slip rings with 400 grain cloth.

### Stator Testing

Checking the stator windings for grounds, opens or shorts, a 110 volt test lamp or an ohmmeter can be used. Connect the 110 volt test lamp to any one of the contacts in the nylon holder, and ground the other prod to the shell. If the light lights, then the windings are grounded. Next connect the test light between each pair of contacts in the nylon holder.

The light should light each time connections are made. Should the light fail to light, it would indicate that the windings are open. In making checks for short circuits in the stator windings, it becomes quite difficult because of the low resistance of the stator windings.

Normally, a check for grounds and opens should be sufficient. It takes special instruments and equipment to locate a short circuit in the stator windings. This equipment is not normally found in the field. After making all of the checks of the unit, reassemble it, and run a test on an out-put machine. If the unit fails to supply it's rated out-put, then shorted stator windings are indicated. The stator must be replaced as an assembly.

*Continued on page 96*

**ALL NEW  
STEWART-WARNER**



## "100" SERIES ELECTRIC TACHOMETER

### SAVES MONEY FOR YOUR CUSTOMERS...MAKES IT FOR YOU!

Built for profits, the new Stewart-Warner "100" Series tachometer offers leading sales features—startling performance on the road. **You sell...**

1. **New precise readings.** Engine performance readings are accurate even at high speeds. Shift patterns are operated more smoothly to prevent engine lugging. Result: maintenance cost and down-time are reduced.
2. **New standards for dependability . . . accuracy.** Quality-designed components and design eliminate pointer waver. There's no overrun or lag, driver always knows exact engine speed.
3. **New easy installation** with deluxe top-of-dash, steering post, or panel mounted models for 4, 6, and 8 cylinder engines; 6 and 12 volt ignition systems; 0-5000, 0-6000, and 0-8000 dial scales. Simple wiring connections mean quick reliable installations. Case size is same as other Stewart-Warner Tachs—3-11/32" in diameter—has black face dial, white numerals and pointer.

**Call your  
Wholesale Supplier  
Today!**



Dept. AD-60, 1840 Diversey Pkwy., Chicago 14, Ill.

# Make New Quick Profits Selling Car Owners

## APPCO'S AUTOMATIC LOW-PRICED

# LOAD-CONTROL

*Easier to Install... Sells at Half-the-Price of Other Stabilizing Units*



**NO BUMPER-DRAG** on steeply inclined driveways. **LOAD-CONTROL** gives cars increased road clearance.



**NO LURCH** on curves—even when car is overloaded. You swing around sharp corners on an even keel with **LOAD-CONTROL**.



**NO NOISY BUMPING** on rough, rutted roads when your overloaded car "hits bottom." **LOAD-CONTROL** absorbs the heaviest shocks.

### 30 MINUTES TO INSTALL

Appco's Automatic **LOAD-CONTROL** can be installed in less than 30 minutes by any handy man with a wrench. Simply replace 2 car shackles on rear springs with complete shackle-connector unit.

HERE IS THE NEWEST, LATEST OF THE FAMOUS APPCO DEVICES FOR MODERN MOTORCARS.

Your customers who drive heavily loaded vehicles can now equip their cars with the new APPCO Automatic **LOAD-CONTROL** for less than half the price of other leveling units.

**LOAD-CONTROL** opens up a vast new field of profits. You'll sell 5 times as many car owners at this down-to-earth price.

**FOR ALL TYPES OF  
HEAVILY LOADED CARS  
AND VEHICLES**



With new patented "elbow-shackle connector." Appco's Automatic **LOAD-CONTROL** eases and softens the ride under all road and load conditions. **LOAD-CONTROL** is "like riding on a cushion of air."

## APPCO'S AUTOMATIC

# LOAD-CONTROL



"LIKE RIDING ON A CUSHION OF AIR"

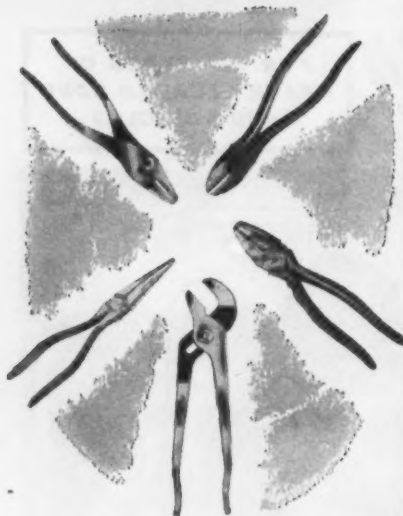
**SEND FOR** complete details today—with prices, profits and all information to:

**AUTO PRECISION PARTS CO., INC.**  
375 PARK AVE., NEW YORK 22, N.Y.



# You'll DO THE JOB EASIER WITH THE RIGHT PLIER

CHAN NEL LOCK



*Full Polish Finish  
Quality Pliers*

Any job is a hard job without the right tools. These special purpose Channellock quality pliers will help you do hundreds of jobs easier, faster. They're precision-built of high grade drop forged steel to last longer, work better. And you'll like the gleaming, full-polished finish at no extra cost.

Ask for Genuine Channellock pliers by name.  
Look for the trademark on the handle.

**CHAMPION DEARMENT TOOL COMPANY**  
MEADVILLE, PENNSYLVANIA

## New Generator . . . . . Continued from page 94

By examining the illustrations in this article, you will notice that there are six diodes mounted in the slip ring end frame assembly. Three of these diodes are mounted in the slip ring end frame, and three are mounted in the bracket or heat sink, which is attached to, but insulated from the slip ring end frame. The battery terminal of the generator is attached to the insulated heat sink.

All diodes are marked with a plus or minus sign on the hexagonal head, to identify the polarity of the diode case. On a unit to be used on a negatively grounded system, the negative case diodes are mounted into a slip ring end frame, whereas, positive case diodes are mounted into the insulated heat sink. Diodes with a negative case have positive polarity leads.

In checking diodes for shorts and opens an ohmmeter is the most satisfactory instrument. In checking for shorts, connect the negative lead of the ohmmeter to the negative case of the diode. Remember in checking the diodes that polarity of connections is of the utmost importance. Connect the positive lead of the ohmmeter to the positive lead of the diode. Re-

verse the connections for positive case diodes.

Ohmmeter readings may vary considerably when checking diodes, but if reading is below 300 ohms, the diode most likely is faulty and should be replaced. Move the leads back and forth, up and down, to help locate loose connections. Use the ohmmeter scale, which would indicate the 300 ohm value, approximately in the middle of the scale. This aids in the accuracy of the checking procedure.

Always double check the polarity of your ohmmeter leads, by connecting them to a DC voltmeter. The voltmeter will read upscale when the positive lead of the ohmmeter is connected to the positive side of the voltmeter, and the ohmmeter negative lead is connected to the negative side of the voltmeter. In checking for an open circuit diode, connect the negative lead of the ohmmeter to the positive lead of the diode, and the positive lead of the ohmmeter to the negative case of the diode.

Reverse the connections of the positive case diodes. If the ohmmeter reads infinite resistance, the diode is open and must be replaced. In replacing a diode, which

*Continued on page 98*

## Calendar of Events

June 20-July 5—2nd annual International Auto Show to be held during 1960 Chicago Trade Fair, Navy Pier, Chicago, Ill.

June 20-22—Pennsylvania Automotive Assn., Bedford Springs Hotel, Bedford, Pa.

July 7-9—Independent Garage Owners of America 5th annual convention, Dinkler Plaza Hotel, Atlantic, Ga.

July 21-23—Automotive Trade Assn. Managers summer meeting, Grand Hotel, Mackinac Island, Mich.

Oct. 10-12—Automotive Parts Rebuilders Assn. annual convention, Conrad Hilton Hotel, Chicago.

Oct. 15-23—National Automobile Show, Cobo Hall, Detroit.

Oct. 16-21—American Trucking Assn. annual convention, Waldorf-Astoria Hotel, N.Y.C.

Oct. 23-25—New Jersey Automotive Trade Assn., Chalfonte-Haddon Hall, Atlantic City, N.J.

## The Mechanic's Best Friend!



**LIQUID WRENCH**  
Loosens  
Rusted Bolts  
nuts, screws, "frozen" parts!

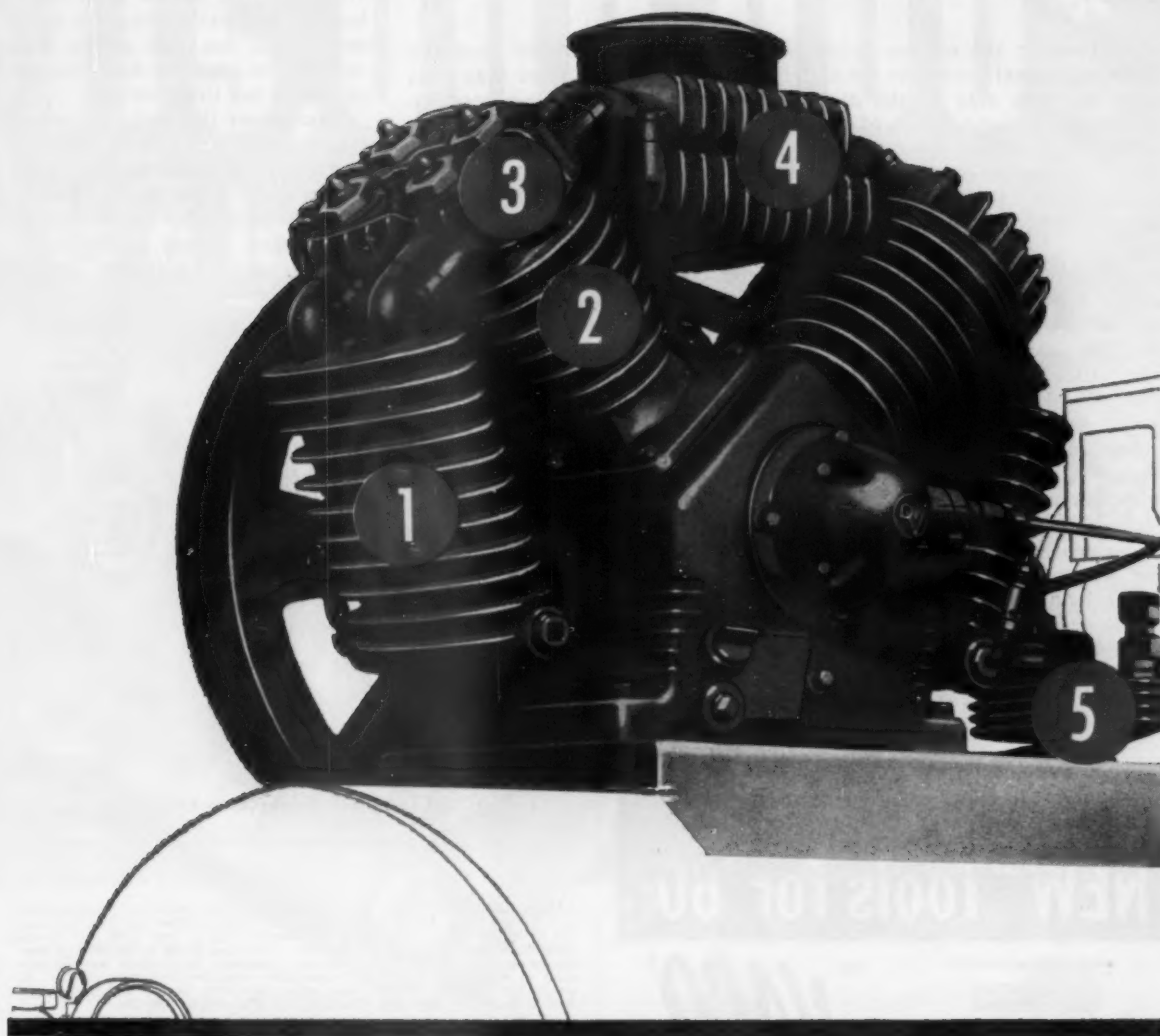
The super-penetrating rust solvent that quickly loosens rust and corrosion.

**YOUR JOBBER HAS IT!**  
**RADIATOR SPECIALTY CO.**  
CHARLOTTE, N. C.

## TESTED PROFIT MAKER!

Now's the time to boost your customers' vacation driving comfort—your summer sales and profit, too. Glide Control, the dependable, automatic throttle control for cars or trucks, installs easily and quickly. Retails for \$29.50. Get details from:

**GLIDE CONTROL CORP.**  
1608 Centinela Avenue, Inglewood, Calif.



## Fewer stops and starts!

**THANKS TO GREATER FINNED COOLING AREA** DeVilbiss air compressors require fewer running cycles and actually help stretch your power dollars. Hot air, delivered into your tank, shrinks as it cools, requiring more frequent running cycles to keep tank full. Cool-running DeVilbiss compressors deliver low-temperature, less expanded air to your tank. Results: less shrinkage, fewer running cycles, significantly lower power costs.

Notice that the finned cast-iron intercooler(1) is extra large to permit a longer cooling cycle between compressing stages. Finned cylinder wall(2) and head(3) allow rapid, thorough heat dissipation. Finned aftercooler(4) lowers temperature of the air still further before it enters the tank. Even the check-valve manifold(5) is finned for maximum aftercooling. For complete details on efficient DeVilbiss air compressors, call your DeVilbiss jobber. The DeVilbiss Company, Toledo 1, Ohio.

FOR TOTAL SERVICE, CALL

**DEVILBISS**



## New Generator . . . . . Continued from page 96

is mounted in the outside frame, use the diagonal cutters to cut the leads on each side of the diode lead. Leave about 1/2 inch of wire on each side of the diode lead, to match the replacement diode.

Then with a socket wrench, remove the defective diode. Negative case diodes have right hand threads and positive case diodes have left hand threads. After removing the defective diode lightly coat the threads of the new diode with silicone grease, or light engine oil. Install the diode and torque to 200 inch pounds.

Delco Remy cautions when soldering to cut your soldering time down to the very minimum, as heat can destroy the diodes. When soldering use only 60 per cent tin and 40 per cent lead solder, or solder having a melting point of 360°F. or above.

Remember to clip off any of the unused wire attached to the diode wire, so that your connections are neat and clean. In checking the

brushes, if it is found that the brushes are worn more than half way, they should be replaced. In replacing the brushes and holders renew them as a complete assembly. There are both right and left hand brush holders and springs. These are used for generators which rotate clock-wise viewed from the pulley end.

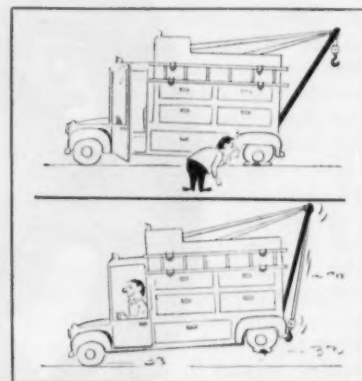
Both brush holders should be to the right of their pivot pin, as viewed from the outside of the rectifier end frame. Check brush spring tension with the hook spring scale, at 15 ounces. Bearings in the alternator are normally not lubricated during the normal operation of the unit.

They are, however, lubricated with Delco-Remy lubricant during the assembly of the unit. Each reservoir should be half filled with this lubricant.

Filling beyond the half way point will result in over flow of grease into the alternator unit, causing bearings to overheat. In

reassembling the alternator unit, after pressing on the rotor shaft bearing and assembling the drive end frame, fan and pulley, this unit can be clamped in a vice, as shown in the illustration.

Then lower the stator assembly into place, indexing the stator case dowels. Use a through-bolt to hold brush holder away from slip rings when installing slip ring end plate. Make sure nylon connector is firmly engaged with its mating connection.



Look for these

## NEW "Tools for '60"

by **VACO**®

**No. DU-68 "Reversible" Clutch Head Screw Driver.** Two most popular clutch head screw sizes on one tool. \$1.80 ea.

**No. DD-211 "Delco" Distributor Tool.** Helps you change distributor points easier and faster. \$1.50 ea.

**No. BT-47 "Bendix" Brake Tool.** Made of chrome vanadium steel. For all late model cars. \$1.30 ea.

**No. HK-17 Hex Key Wrench Set.** Seven piece set has most popular sizes. Fits pocket or tool box. \$1.30 ea.

**No. SP-19 Electric Tester and Probe.** Tests spark plugs, ignition coils, electric outlets. \$1.20 ea.

Ask your jobber salesman to show you the new VACO Walking Display . . . which features all the new specialty numbers illustrated in this ad. Or, look for them at your Jobber's . . . on VACO's colorful Counter Cards.



Free Catalog Sheets On All Items Available From:

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**SALES REPRESENTATIVE:** National, top-rated auto parts manufacturer and distributor is expanding business and needs capable traveling salesman, age 25-46, to sell industry's most outstanding line of over 5,000 fast-moving replacement parts, assortments and kits. Earnings \$8,000 to \$10,000 first year, increasing every year. Paid vacation. Complete, in-the-field training program at company expense. All supervisory positions filled from within. No investment required. Write today giving full work history and background. Box 8, % Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

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U.S. Pat. No. 2389608

make sure of  
**FULL  
PROFIT!**

When you stock and display miracle Micro-Lube, the super lubricant, you get FULL profit on every sale! You make more friends . . . more sales . . . more profit . . . when you make a deal with Micro-Lube!

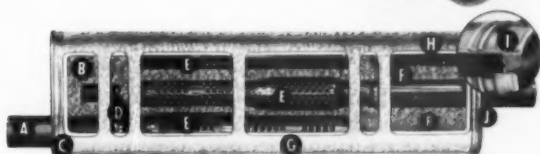
**MICRO-LUBE**

8505 DIRECTOR ROW • DALLAS, TEXAS



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- B.** Chamber and tuning tube to eliminate intermediate frequencies
- C.** Quadra-Crimped heavy duty heads Zinc-Coated
- D.** Aluminized or zinc-coated support or reversing baffles
- E.** Chambers for eliminating high level frequencies
- F.** Chamber and tuning tube to eliminate low level frequencies
- G.** Zinc-Coated shell
- H.** Asbestos-wrapped for added life and better silencing
- I.** Enlarged view of lock-seamed head, shell, asbestos and outer wrap—an exclusive Arvin design feature
- J.** Nipple inlet and outlet seam-welded all around



# Arvin

## is a lot of muffler!

This is the muffler that's all muscle and performance—endurance conditioned by design and better materials to last longer under every type of driving condition. This high degree of muffler perfection has been gained after 33 years of muffler manufacturing experience—during which time Arvin has produced more than 115,000,000 mufflers.

Extra strength and long life without excessive weight, are achieved in Arvin mufflers! Arvin mufflers are better because of *all-around* balance between design, materials, methods of manufacturing and that priceless ingredient, experience . . . the world's greatest teacher!

\*Number of mufflers Arvin had produced as of 1959. 1960 figure substantially higher.



# "Arvin Is a Lot of Muffler ...and more"

say Roy and Bob Bunting of Motor City Automotive, Inc., Detroit

"When you have an opportunity to change up to a nationally famous-for-quality line that offers as many selling and satisfaction advantages as the new Arvin line of replacement mufflers and pipes, it is just good plain business sense to seize that opportunity!

"We at Motor City Automotive, Inc. in Detroit are extremely pleased to become a member of the Arvin distribution team."

Signed

ROY BUNTING

BOB BUNTING

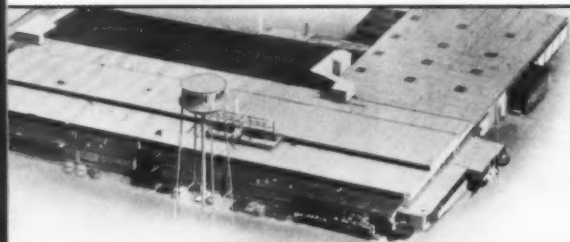


HERE'S WHY AUTOMOTIVE MEN LIKE YOURSELF CAN LOOK FORWARD TO A BIG SELLING SEASON WITH THE ARVIN LINE



## better mufflers ... better coverage ... MORE SALES

Be assured of complete coverage—stock the line that offers the most. The entire Arvin line of mufflers is zinc coated or aluminized; all Arvin pipes are "Arvinized" for complete protection from rust, grease and dirt.



## Arvin production facilities large enough to meet every need

Meeting the needs of the expanding replacement market with ease are Arvin's eight automotive plants. You are assured of immediate delivery of carload lots—or a single muffler. Remember, Arvin markets *one* and one line of quality mufflers only!



## Arvin brand name acceptance gives you a big selling edge

Colorful ads by Arvin, a brand name already known and accepted by millions of Americans pre-sell for distributors, jobbers and dealers across the nation. Arvin further backs all this with local advertising and powerful sales aids of all kinds.



## FREE "Get-A-Gift" plan for dealers!

Lucky dealers will find Arvin gift certificates tucked away in cartons. These gift certificates entitle the dealer to such wonderful Arvin products as portable transistor radios, stereo phonographs, barbecue grills and outdoor furniture.

## ACT TODAY!

Prosper with the Arvin line of replacement mufflers and pipes. Call, wire or write today for all the profit making facts and figures.



ARVIN INDUSTRIES, INC.  
Automotive Division  
COLUMBUS, INDIANA

## Arvin makes it easier for you to change up to the Arvin line

Change over is made as easy as can be when Arvin's travelling teams of conversion specialists do the job. They stay on the spot until the job is done—speedily and efficiently.

## Thermostats . . . . . Continued from page 49

in a system with a 7 pound or higher pressure cap, as this would cause the stat to control at too high a temperature.

3. A pellet type stat may be used in place of a bellows stat providing it is of the proper size and temperature range for the application.
4. Best heater performance is obtained with the highest temperature stat suitable for the application.

In the past, stats have been located in the radiator top tank and in the hose to the top tank. Currently, in most cars they are placed on the top forward section of the engine at the base of the hose to the radiator top tank. The power element is always located toward the engine.

Engine overcooling or overheating are the two main indications to the car owner that a stat may not be functioning properly. However, a malfunctioning stat is not the only cause of engine overheating. Other causes include a loose fan belt, contaminated or leaky cooling system, leaves or bugs on the outside of the radiator, defective water pump, or an engine that is out-of-time. For this reason a thermostat that is suspected of malfunctioning should be carefully tested before replacing it with another. Listed below are instructions for removing, testing and installing a stat:

1. Remove the radiator pressure cap. If the engine is hot, utilize the detent position of the cap to avoid scalding.

2. Loosen the drain plug in the radiator bottom tank, and drain sufficient coolant into a clean container to lower the cooling system liquid to a level beneath the thermostat. Tighten the drain plug and examine the coolant. If the coolant is contaminated, as indicated by excessive rust and scale deposits, it is recommended that the entire system be drained and flushed, and that the used coolant be discarded. If the coolant is in good condition, it may be reused later.

3. Remove the bolts securing the thermostat housing at the base of

the water hose that leads to the top tank of the radiator. Gas lines or other components sometimes attached to the thermostat housing should be removed.

4. Lift the housing, remove the thermostat and discard the housing gasket.

5. Examine the thermostat. It should be of the proper tempera-

ture range and type, as indicated on an application chart, to function properly. If not, it should be replaced.

6. To test a stat, use a can of water with a thermometer suspended in it. Hang the stat on a hook in the can. Do not let it touch the sides or bottom of the can. Heat and stir the water. The thermostat should start to open at the temperature stamped on it, plus or

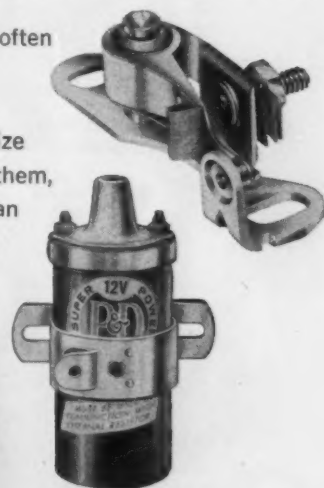
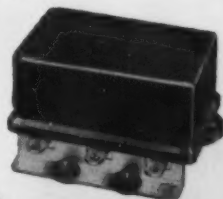
*Continued on page 113*

## HERE'S THE PROFIT—AND THE P&D-IZE PROGRAM TO HELP YOU GET IT

For example—just say to a customer "We'll P&D-ize your ignition system and give you a whole year's warranty on the new P&D parts installed."

Wouldn't that sell almost any car owner you know? Sure it would! But that's only part of the big 7-point P&D-ize program developed by your automotive wholesaler and P&D.

Ignition tune-ups are the most often needed and the most profitable part of the service business. Now—with the P&D-ize program—you can get more of them, more easily, more profitably than ever. Ask your P&D wholesaler or write us **now!**



**P&D MANUFACTURING CO., INC.**  
STARTING - LIGHTING - IGNITION  
19-02 STEINWAY ST., LONG ISLAND CITY 3, N. Y.  
Export Sales: Borg Warner International, 36 So. Wabash Ave., Chicago 3, Ill.

# MOTORCRAFT...



an all-new line of quality  
replacement parts  
now at your jobber's



## BE SURE OF QUALITY THAT PROVIDES CUSTOMER SATISFACTION... INSTALL **MOTORCRAFT** PARTS

Now you can install quality MOTORCRAFT replacement parts . . . help increase high-profit repair business by building customer good will. MOTORCRAFT parts—specially introduced for service stations and independent garages—are obtainable only from your jobber, who supplies so many of your other needs. With MOTORCRAFT parts, you also receive the most complete Quick Reference catalogs available. Call your jobber today.





## Air Conditioning Report . . . Continued from page 41

facturers shows that a demand is present among compact car owners.

These six manufacturers, for example, say that of 79,000 installations last year, about 9,000 went into other than standard size passenger cars. On a percentage basis, this would be 11.3 per cent.

Bear in mind that the Big three's compacts were not introduced until last Fall—or with three-quarters of 1959 already gone by. It would seem that the ratio would rise even higher at this year's end for compact and imported car installations.

The increased awareness of the car owner (and truck owner likewise) of such features as rapid cool-down and reduction of traffic noise, drafts, dust, and odors has directly influenced demand for automotive air conditioners. Sales are rising in all regions of the country. Greatest volume is still in the Southwest.

Growing acceptance of the car air conditioner by the public as an excellent item of optional equipment—similar to a heater or radio—is evident. A survey conducted by Du Pont among its salesmen using air-conditioned cars is worth noting:

Nine out of ten interviewed reported improved job performance, higher customer call rate, lower fatigue level, and better driving records.

Information for taking on an air conditioner installation in your service department or service shop can be had of course by writing to new car manufacturers or to one of the many independent makers of automotive air conditioners.

As we go to press, the latest available listing of a number of independent makers of the automotive air conditioner units is given below:

**A.R.A. Manufacturing Co.**  
P.O. Box 685  
Grand Prairie, Texas

**Capitol Refrigeration, Inc.**  
(Arctic Kar)  
3922 Kalloch Drive  
Dallas, Texas

**Cartrol Corporation**  
P.O. Box 74  
3125 Wyandotte St.  
Kansas City 11, Mo.

**Clardy Manufacturing Co.**  
1728 Layton  
P.O. Box 7065  
Sylvania Station  
Ft. Worth, Texas

**Climatic Air**  
3030 Canton St.  
Dallas 26, Texas

**Eaton Mfg. Co. Heater Div.**  
East 65th St. & Central Ave.  
Cleveland, Ohio

**The Forston Co. Mfg.**  
2117-2119 Judiway St.  
P.O. Box 10231  
Houston, Texas

**Frigikar Corporation**  
P.O. Box 13345  
10858 Harry Hines Blvd.  
Dallas 25, Texas

**Frigiquip Corp.**  
3724 N. May Ave.  
P.O. Box 7205  
Oklahoma City 12, Okla.

**International Automotive Air Conditioning, Inc.**  
1927 S.W. 1st Ave.  
Ft. Lauderdale, Fla.

**Kool Engineering Corp.**  
3716 West Belmont Ave.  
Chicago 18, Ill.

**Lindustries, Inc.**  
1041 Foch St.  
Fort Worth, Texas

**John E. Mitchell Co.**  
3800 Commerce St.  
Dallas, Texas

**Novi Sales & Service Co.**  
20830 Coolidge Highway  
Detroit, Mich.

**Parkomat Mfg. Co., Inc.**  
2000 S. Akard St.  
Dallas, Texas



Donald R. Diggs of the Du Pont Petroleum Laboratory speaks with Harry E. Chesebrough, (right) vice-president of Chrysler Corporation and general manager of the Plymouth-DeSoto-Valiant Division. Mr. Chesebrough is 1960 SAE President. He spoke on the "Challenge of Individualism" at the Philadelphia SAE section meeting recently.

### Executive Program

A year-long executive transition program leading to new presidents and executive vice presidents for Fram Corporation, and its Canadian subsidiary has been announced. The transition period is intended to give the new executives more opportunity to become acquainted with their new posts.

Theodore H. Belling, now president of Fram will relinquish the presidency at year end. He will be replaced by Arthur F. Pettet, now executive vice president, whose position will be taken by Frederick A. Knight, president of Fram Canada, Ltd.



Austin of England has introduced (above) in this country a new die-seal taxi.



No matter  
how you slice it . . . you get  
a bigger cut of profit  
with



## Quality-Packed BRAKE PARTS ASSORTMENTS

THIS NEW  
AND HANDY,  
QUICK-  
REFERENCE  
WALL CHART  
IS FREE FOR  
THE ASKING

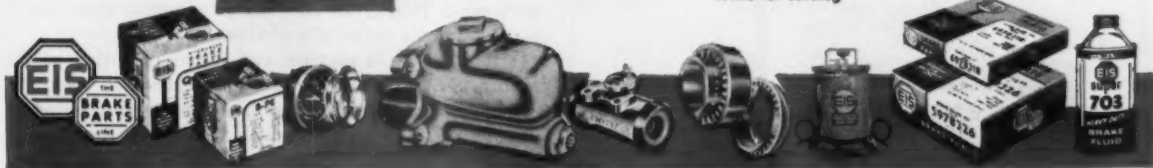


Profitable brake service starts with these EIS Quality-Packed Merchandisers — Brake Parts Line assortments that provide basic inventories of fast-moving parts — assortments that provide room for expansion, too!

Stock-Check-labeling on each merchandiser gives you visual inventory control — practically "hands" you the right part when you need it. What a wonderful way to save time and speed your work! What a wonderful way to get a bigger slice of brake service profits!

EIS AUTOMOTIVE CORP., Middletown, Conn.

Write for catalog





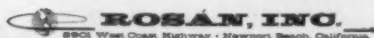
## ANOTHER ROSÁN ENGINEERING ACHIEVEMENT

\* LIMSERT... the insert designed for the quickest, most secure thread repairs in a minimum of space • A one piece, high strength aluminum alloy, strong threaded column, embodying the ultimate in reliable service

High strength • corrosion resistant • Easy, waste free installation • Positively locked into parent material • No complex tools required

Ideal for thread repairs in aluminum castings • Can be used for direct replacement of wire type inserts in a slightly larger hole with no increase in bolt size • Convenient kits available • Also manufactured in stainless steel for highly stressed installations

Send for 20 page Engineering Data Book  
address Mr. R. Weber



\*A trademark of Rosán Engineering Corp.

## Tips on Upholstery Cleaning

Convertible weather is almost here. It's time to put your customers car interior in tip-top shape for open-air driving and summer vacation fun.

Follow these few simple suggestions which are designed to bring the "new" look back to a car's interior, regardless of age or make.

First, a quick check of the loose seams. If the upholstery is leather, it will probably reveal that the stitch holes are in good condition even though the threads are weakened and deteriorated.

Go over these bad seams. Clean out the rotted threads. Sew them up again with a weather-proof nylon thread.

Where seams have come apart in large areas, remove the seat and restitch by machine. If the seat cushion seams have small tears in a few other places, save time by taking care of them while the seat is apart.

Frayed seams turn up quite frequently at seat back corners. Rear passengers continually rub these corners getting in and out. These usually require only minor hand-stitched repairs.

With these few simple repairs out of the way, you're ready to tackle the cleaning operation. How much of a job this will be, of course, depends upon the type of interior trim.

If your customer's car is trimmed in fabric combination, start by removing all loose dust and dirt with a good stiff brush. Follow through with a thorough vacuum cleaning of front and back seats and floors.

Rayon and wool upholstery can be cleaned with any good cleaning fluid. Heavy use of this type of cleaner should be avoided, however, because it loosens rubber backing and deteriorates foam rubber padding. Nylon cloth usually needs no more than a light washing with mild soap and water.

### Sponge With Warm Water

To remove most stains from fabrics, sponge with warm water. Allow to dry, and if necessary, follow by gently rubbing with cleaning fluid until the spot disappears. The cleaning agent should be applied lightly with a clean cloth and quickly removed with a blotter to avoid rings.

Oil, grease, chewing gum and tar spots should be softened first by moistening with cleaning fluid—scrape off any excess and follow with more cleaning fluid until the spot is gone.

Leather upholstery and trim should be washed with a mild soap and warm water. The following method should be used.

Dampen a wad of cheesecloth in lukewarm water and wring out. Rub it into a cake of mild soap forming a dry, meringue-like lather. Shampoo the soap into the soiled areas working about two square feet at a time. Follow up with a clean cloth removing all the grime-laden soap. It may be necessary to repeat this step if the dirt film is especially stubborn.

If the leather is pleated, rub in the direction of the pleating. Make sure that all soap is cleansed from the seams. After the leather has been sponged clean of all soap, buff it to a high sheen using a clean, dry cheesecloth.

# Gabriel is bustin' out all over...



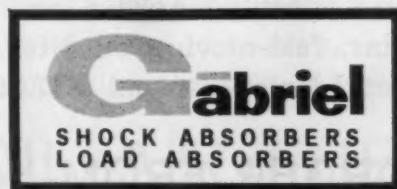
## ...to help you sell shocks and Load-Absorbers

We're out to make this the "hottest" summer in your sales history... with Gabriel shock absorbers and the new Gabriel Load-Absorber!

As you know, we were featured in the terrific "Big Boost" promotion in the May 24 issue of *Look*. Now you'll see Gabriel ads in July and August issues of *Sports Illustrated* and *Outdoor Life*, and in the June, July and August issues of *Motor Trend*... seven big ads right at the peak of the summer selling season. And you'll hear hard-hitting Gabriel sales messages on Martin Agronsky's "Monitor" news commentary twice every Saturday and twice every Sunday, all summer long!

There are profits aplenty in this big Gabriel sales push. *Take part!*

THE GABRIEL COMPANY • Cleveland 15, Ohio







FOR FUN IN  
THE GOOD OLD  
SUMMER TIME

GENUINE *Skotch Kooler*<sup>®</sup>

**FREE**

FOR **FRAM** DEALERS

....WITH THE D-19

Just put in your order for the Fram D-19. It contains an assortment of 30 popular, fast-moving oil filter cartridges along with your **FREE** Skotch Kooler. Total dealer cost—only \$47.29. *One PH3 and one CH-6PL are included at list price.*

**ORDER FROM YOUR FRAM SUPPLIER TODAY!**



It's the big 4 gallon size, largest Skotch Kooler made. Indispensable on picnics, fishing trips...for motoring, boating, camping, barbecues. Use it indoors or outdoors—all year 'round. Skotch Kooler is the preferred brand in coolers... just like Fram is the preferred brand in filters! Fram Corporation, Providence 16, R. I.

**FRAM** FILTERS • OIL • AIR • FUEL

## Truck Painting . . . . . Continued from page 54

were used. The surfaces again were blown off with clean dry air to remove any dirt and moisture that may have been trapped in crevices and mouldings. Then the primer coat was applied and allowed to dry.

The primer coat was then sanded and again the entire trailer blown off with clean dry air. This was followed by a complete rub down with a tack rag. After John was assured

of a clean dry fully prepared surface, then the painting began.

Mr. Abernethy believes in going out after business even when his shop is handling its normal capacity. He has found that a waiting list of customers who want jobs done is a very comforting cushion.

Many times a customer with a truck just can't release it for painting at the time set by George. With

the backlog cushion, a phone call to a name on the waiting list fills the gap in his work schedule.

He uses direct mail, personal letters and phone calls to local companies having small fleets of trucks to solicit their paint business. He has put special effort into contacting owners or managers of home delivered consumer food products. He stresses that bread and milk along with other foods should be delivered in clean well-painted trucks.

When you consider all the care taken in the processing of such products before delivery, George doesn't have too tough a job in selling them his appearance reconditioning services. Tie-in's with local community programs on fix-up and clean-up campaigns have also proved helpful in increasing his yearly volume. He stresses color combinations to dress up the trucks and thus help present his customers products in a more pleasing fashion to the buying public.

Answer to Micrometer problem in sketch B on page 52 is .373 inch.

## WANTED

### DEALERS FOR THE NOVI DELUXE AUTOMOBILE AIR CONDITIONERS



## NOVI No. 1 QUALITY PERFORMANCE PRICE

**Superior Cooling**  
**Beautiful Design    Advanced Engineering**  
**Greatly Reduced Installation Time**

Adapter kits packaged and sold separately for greater flexibility in sales. Five Novi warehouses assure fast delivery and lower inventory investment.

**90 DAY WARRANTY ON PARTS**

**SPECIAL  
DEALER  
PRICE**

**\$182<sup>50</sup>**

Complete with clutch  
Federal Excise Tax  
included.

F.O.B. nearest Novi warehouse

### NOVI SALES AND SERVICE CO., INC.

WAREHOUSES: 2501 South Grand Avenue, Los Angeles, Calif. • 2112 West 7th Street, Fort Worth, Texas • 2932 Troost Avenue, Kansas City, Missouri • 20830 Coolidge Hwy, Detroit, Mich. • 190 Fourteenth St., N.W., Atlanta, Ga.

For information, write Novi Sales and Service, 20830 Coolidge Hwy, Detroit, Michigan

## Shock Absorber . . .

Continued from page 39

in first class condition by five tonight. Okay Mr. Jones, may I have your address and 'phone number.'"

### Be Safety-Minded

Train yourself and your men to be safety-conscious. Always be on the lookout for safety items that can be sold with the positive sales approach. Don't let this money-making business slip through your fingers. Utilize the tie-in type of selling.

Like cheese and crackers go together, so to when you or your mechanics are packing wheel bearings, sell shocks, brakes, bearings, seals, tires and related items. All these items are tie-ins. They are easily visible to the customer and can be done at the same time with less cost to the customer.

There's a tremendous potential for safety sales throughout the United States. Don't miss the opportunity to increase your gross. At the same time you will be contributing materially towards decreasing the slaughter on our American highways.

## HAVE YOU TRIED SAND BLASTING?

Tired of hand-sanding and scraping of Rust? Scale? Paint? Tough, hard-to-reach places cleaned to bare metal in SECONDS with . . .

### NEW MODEL B "SANDY JET" SAND BLASTER

- Needs no separate blasting room.
- Light weight rugged construction.
- New pistol-grip for easy operation.
- Uses any easily obtainable abrasives.
- Three sizes of interchangeable sand nozzles and air jets, available to suit any job.
- Fast, intense, powerful, cutting action.
- Operates efficiently on 50 to 225 lbs. air pressure.



LOW COST  
\$39.95

★ 10 day money back trial offer. Complete with face shield, operators' hood and two extra nozzles.

Sand blasting saves 25% to 75% of the man hours required for hand cleaning on any job. The Sandy Jet will pay for itself on the first few jobs.

Order from your distributor or directly from the factory

ALC COMPANY  
R.D. #5, Box 40, Medina, Ohio

## COMPLETE LIFTING PROTECTION WITH RUBBER LIFT PADS



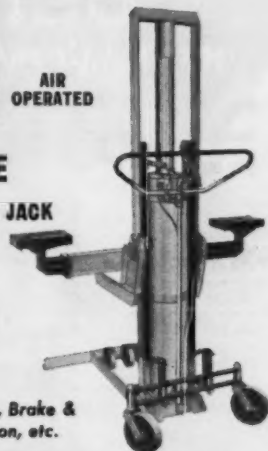
The newly designed 5"x8"x1" thick rubber lift pads protect bumpers from kinking or bending when it is necessary to raise cars by bumpers. Pads give 16" overall support under bumper, plus the added cushion to protect against slippage.

### Branick DELUXE BUMPER SERVICE JACK

LIFTS 3000 LBS. ON 125 LBS. OF AIR LINE PRESSURE. Raises all car quickly and easily. Lifts to full height of 28". Easy to Position. Lift all four wheels with one DELUXE jack and two jack stands.

Speeds Up . . . Tire Service, Brake & Front End Work, Lubrication, etc.

BRANICK MFG. CO., INC.  
FARGO BOX 1937 NORTH DAKOTA



# SERVICE FOR YOUR B&D TOOLS



Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.

Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

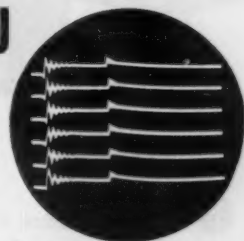
Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 5106-S, Towson 4, Md.

Black & Decker



QUALITY TOOL SERVICE

## YOU DO MORE TUNE-UPS BECAUSE YOU SEE MORE!



The Du Mont  
EnginScope gives a  
complete picture!  
A trace for each cylinder.

So much can happen to an ignition system you need clearly defined details — and lots of them — to do a top-notch tune-up job. The fabulous Du Mont EnginScope enlarges every detail of each cylinder's ignition cycle — making your job easier and more exact.

Applicable to commercial and military vehicles, including shielded ignition systems.

**DYNAMIZE** YOUR CARS  
With the Fabulous  
**EnginScope**  
**DU MONT** ALLEN B. Du MONT LABORATORIES, Inc.  
750 Bloomfield Avenue, Clifton, N. J., U.S.A.



# STEEL

## hammer case

For a lifetime of service! Even with the roughest treatment, you can't break it. Made of special heat treated alloy steel, this exclusive Ingersoll-Rand feature on the Size 407 protects the hammer mechanism from sharp blows, yet is lightweight for easy handling. Look for red ● ball extras like this before you buy!

AIR  
IMPACTOOL  
Size 407, 1/2" Drive



*another red ● ball extra*

**Built-In Air Control.** Adjustable trigger stop (an I-R exclusive) controls power. Air-balanced throttle valve provides full power range with smooth and complete control.

**6-Vane Air Motor.** Compare a "six" with a "four" . . . you get greater power, smoother operation, higher starting torque.

**"Cuss-proof" Socket Retainer.** Sockets can't fall off accidentally, but strong, spring-held retainer can be easily replaced. Another I-R exclusive.

**"2-Pack" Construction.** Either the impact mechanism "pack" or the motor "pack" can be serviced individually without disturbing the other.

**Electronic Precision.** Special electronic equipment double-checks machined parts for perfect mating of all surfaces and bores.

*best design—biggest line  
look for the red ● ball extras*

# Ingersoll-Rand

51A-18

11 Broadway, New York 4, N. Y.

## Thermostats . . . . .

Continued from page 101

minus 10°F. and be fully open (approx.  $\frac{1}{4}$  inch minimum) at 22°F. above the specified temperature. If defective, discard.

7. Install a stat that tests satisfactorily or a new stat. The pellet or bellows unit should be toward the engine block. The thermostat may have positioning information marked on it. Rotate it so the frame does not block the water flow. The flange should seat properly in the housing.

8. Install a new gasket. When the housing and gasket are located properly, tighten the nuts *evenly* and securely.

9. After installing a thermostat, give the cooling system a quick check. All connections should be tight. The hoses should not be brittle or spongy.

10. Refill the cooling system to 1- $\frac{1}{2}$  inches below the bottom of the filler neck. In summer a properly inhibited coolant should be used. In winter anti-freeze may be necessary. Most anti-freezes contain inhibitors, so that additional inhibitors need not be added. Use of anti-freeze for more than one season is not recommended.

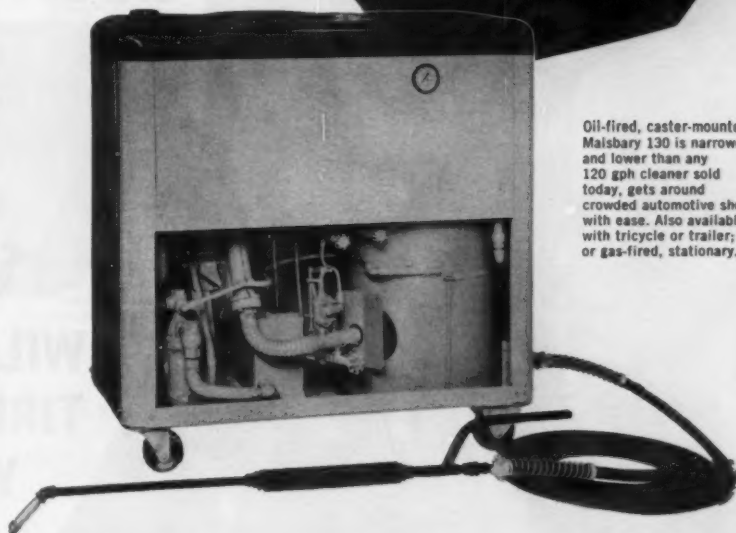
11. Examine the pressure cap before replacing. A pressure rating is probably stamped on it. Confirm that the correct pressure cap is being used by checking an application chart. A higher rated cap may cause cooling system leakage, and a lower rated cap can result in excessive overflow loss. The cap should be free of contaminants, and should always have a good seal to insure a snug fit in the filler neck seat. If the seal is missing or if the cap is defective in any other way, discard, and install a new cap.

### CORVAIR THERMOSTATS

If improper cooling is suspected, it is suggested that you first check for correct operation and full travel of the linkage and valve operated by the thermostat. When the engine requires maximum cooling, the side of the valve opposite the hinge should be open 1- $\frac{1}{2}$  inches. If it is not, adjust the connecting rod swivel to produce correct full-open travel.

Get 20% more cleaning power  
at no extra cost  
from . . . . .

## NEW Malsbary 130 STEAM CLEANER



Oil-fired, castor-mounted Malsbary 130 is narrower and lower than any 120 gph cleaner sold today, gets around crowded automotive shops with ease. Also available with tricycle or trailer; or gas-fired, stationary.

Here's a more powerful, more compact cleaner... built by Malsbary to sell at the same price as standard 120 gph cleaners. It offers you—

- 10 Extra Gallons Hourly
- 20% More Cleaning Efficiency
- New Nozzle Design

For the same money, you get 10 more gallons hourly—a full 130 gph...plus 20% more cleaning efficiency. This efficiency comes from a new orifice and nozzle design (exclusive with Malsbary), which releases more energy and produces larger droplets in a more uniform pattern. The stream hits dirt harder.

Like the famous Malsbary 110 (more than 9000 in use), the new 130 burns low or high grade fuels equally well, without smoke, soot or fumes. It has same large coils ( $\frac{1}{2}$ " inside diameter) to reduce scaling.

Why wait? Call your Malsbary dealer now—ask about the 130 and special try-and-buy terms.

## MALSBARY

Malsbary Manufacturing Co. • 845 92nd Ave., Oakland 3, Cal.



143

113

Exclusive  
**ARMSTRONG  
SAFETY DISC GRIP**



Famous Armstrong  
"fist" shows how  
Safety Disc tires  
stop skids as  
no other tires can.  
Easy to see,  
demonstrate, sell!

**WILL SELL  
TIRES FOR  
YOU!**

(At full profit)

Safety Discs give  
customers exactly  
what they want  
**EXTRA SAFETY**  
at  
**NO EXTRA COST**  
... and makes  
selling Armstrong Tires  
easy for you



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This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

|  |  |  |   |
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# THE LAST



# LAFF



Conscience is a small, inner voice that often doesn't speak your language.



Keep smiling. It makes folks wonder what you've been up to.

The man who insists on talking about himself all the time soon finds that he has only a one-man audience.

At a Communist gathering one comrade spoke out to the chairman: "My dear comrade, there is one thing I would like to find out. What happens to my unemployment check when we overthrow the capitalist government?"

Education is expensive. Yet the cost of ignorance is a drag on the future progress of any country.

Just remember that if it hadn't been for the Venetian blind manufacturers, it would have meant curtains for all of us.

The big problem in life is not in having good intentions—living up to them is the hard part.

The garageman's bill was delivered to his delinquent customer at his home. The customer opened the letter and began reading: "We are surprised that we have not received anything from you . . ."

With a flourish the customer wrote across the bill: "There's no need for surprise as I didn't send you anything."

A sailor friend of ours named Terry was recently transferred from the submarine service. Seems he wanted to sleep with the window open.

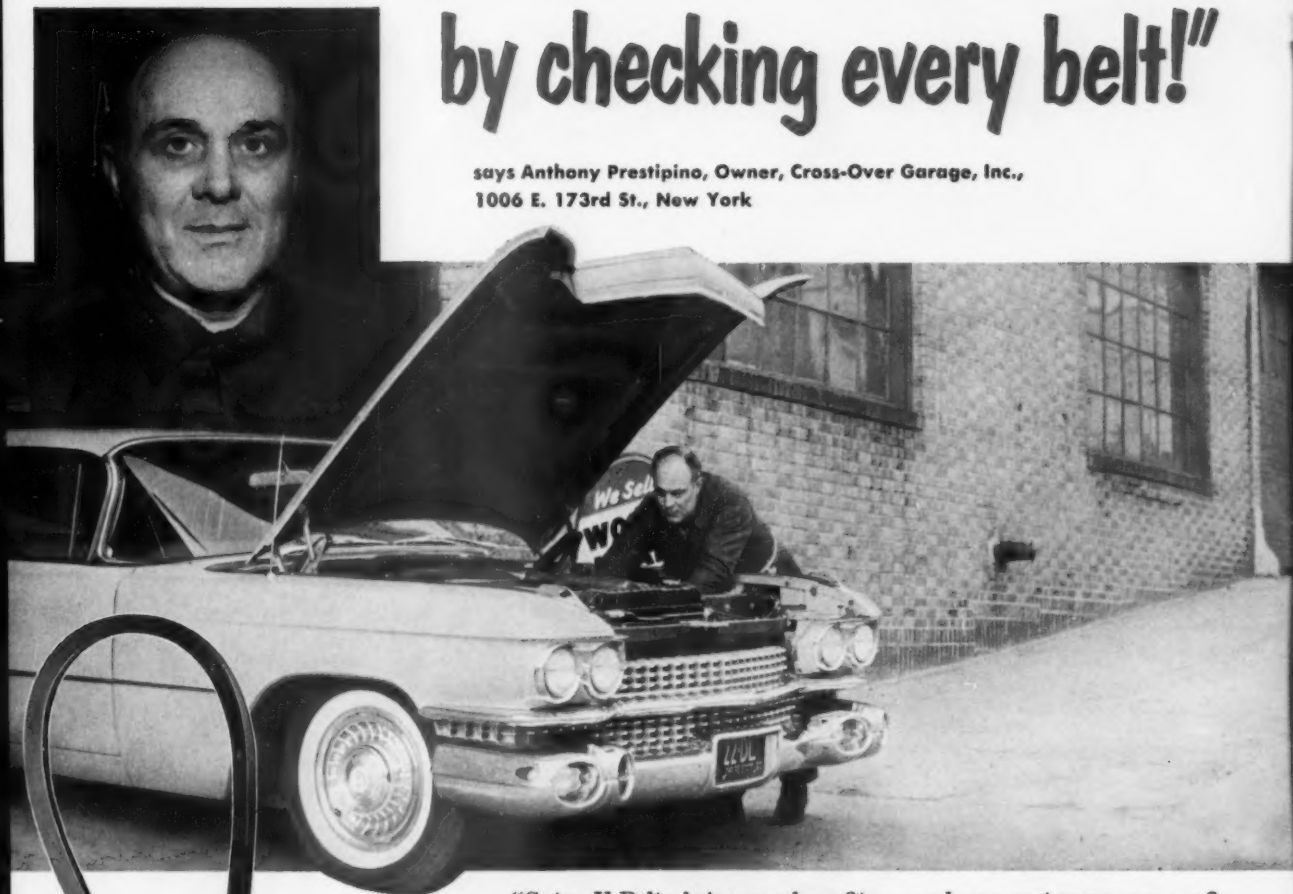


Those people who try to live within their incomes are just trying to mess up prosperity.



# "We gained customers . . . doubled sales . . . by checking every belt!"

says Anthony Prestipino, Owner, Cross-Over Garage, Inc.,  
1006 E. 173rd St., New York



"Gates V-Belts bring good profits — and our customers are confident that their cars are well serviced, because we take time to check under the hood. It's preventative maintenance like this that leads to belt and parts sales for us!"

"V-belt sales have more than doubled since we took on the Gates Line three years ago. I think it's due to superior Gates Sales Tools, and because we've learned to turn the belt over to check for wear.

"Everyone here at Cross-Over Garage really enjoys selling Gates Belts — they're sure-fitting, and Gates Dial Finder and Catalog make it simple to get the right belt for the right car, every time!"

Phone today for YOUR Gates V-Belt Display Rack. This attractive fixture — supplied by your Gates Jobber — puts the right belt for any popular make of car at your fingertips — including belts for "compacts" and foreign cars.

**The Gates Rubber Company • Denver, Colorado**

**World's Largest Maker of V-Belts**

TPA 515

To find belt wear always  
turn belt over — The underside  
of the belt . . . not the top . . . tells  
the true condition of the belt.

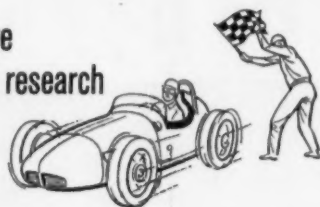
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LIKE THESE:**



# Gates Vulco V-Belts



Thermoid flexible radiator hose wins 10th consecutive Indianapolis "500" climaxing a decade of automotive research



# Now! It's Here!

**THE STRONGEST...  
EASIEST-TO-INSTALL  
RADIATOR HOSE  
ON THE MARKET!**



**NEW**

**Thermoid**

**FLEXIBLE**

**"REDI-CURV" HOSE**

**with rayon corded reinforcement**

- **EXTRA STRENGTH!** Only new "Redi-Curv" has steel and rayon "tire-cord" construction for highest burst protection . . . minimum elongation for modern system pressures.
- **EASIER INSTALLATION!** Accurate sizing assures proper fit for every application. Strong but pliable end caps and permanent flexibility make installation easier.
- **LONGER LIFE—LONGER SHELF LIFE!** New Butyl construction remains flexible in all weather . . . resists heat or cold on the shelf or on the car. New Butyl is resistant to harsh cooling system solutions, engine heat and ozone.

**Stock up now! See your Thermoid Distributor or Jobber.**

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PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

